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Protecting Florida's Agriculture

By Wilmon Newell, Plant Commissioner, State Plant Board

In presenting this symposium on plant protection we are not undertaking to raise the cry of "wolf". Rather, we shall endeavor to place before you as fairly and truthfully as possible the cold, bare facts regarding the situation in which Florida finds herself today with reference to protecting her vital industries against serious insect pests and plant diseases.

My own part in this program is to try to place before you a general view of the entire situation and this will be followed by others who will speak to you upon particular and specific phases of the problem.

If we say things this morning which you have heard us say before, we can only plead in extenuation that what was true yesterday is probably true today and that dangers cannot be dismissed by ignoring them.

Protection of Florida's agricultural industries against the introduction of plant diseases and insect pests is a vital matter. While much emphasis is quite properly being placed on the improvement of varieties, cultural methods and fertilizer practices and upon improved marketing facilities; the fact remains that all of these efforts will prove unavailing if some devasting insect or disease destroys all or the greater part of the crop involved.

Many of Florida's most important crops today owe their existence to the fact that certain dangerous pests have been kept out of the State. Other industries have not been so fortunate; plant diseases have overtaken them and they have passed into history. An example is found in pear culture which was once a great industry in Florida but which gave way before the ravages of pear blight.

To afford the type of protection so essential is the function of the State Plant Board, created by Acts of the Legislatures of 1915 and 1927, and charged with the establishment and execution of plant quarantine measures, with eradicating dangerous insects and diseases and with preventing their spread. The Board is charged, also, with eradicating and preventing the spread of infectious diseases of honey bees.

The plant quarantine work of the Board is carried out in cooperation with that of the Federal Horticultural Board. Inspectors are stationed at all of Florida's maritime ports, where they enforce both the state and federal regulations with reference to the importation of plants and plant products. These inspectors, working with and alongside the customs forces, meet all arriving vessels, whether coastwise or from foreign countries, and inspect cargoes and passengers' baggage and even the holds, cabins, crew's quarters and storerooms of the vessels themselves. This is a prodigious task, as shown by the fact that during the fiscal year which ended June 30, 1927, such inspections were made of 2,989 foreign vessels and 2,991 coastwise vessels arriving at Florida ports. During this same period, 2,304,594 packages or containers were inspected and out of this number 8,775 packages were found to contain eithed dangerous pests or material considered dangerous to the agricultural industries of Florida. Of these, 3,538 packages were destroyed and 5,237 returned to the shippers.

The interception of dangerous insects or diseases is of practically daily occurrence. In one year, new or dangerous pests were intercepted from forty-two foreign countries and the interceptions have included such pests as the Mediterranean fruit-fly, Mexican orange maggot, West Indian fruit-fly, black fly and a host of scale-insects not now known to occur in Florida.

Interceptions during the past year have included the Black Fly, West Indian Fruit-fly, Green Scale, Masked Scale and Stellate Scale. The first four of these are citrus-infesting insects.

The work of inspection at the ports is continuous, day and night, Sundays and holidays, for pests are no respectors of either the clock or the calendar.

Thorough as the quarantine work is, it cannot be made infallible. There is a limit to human endurance

and the members of an all-too-small inspection force, who often work sixteen to eighteen hours a day and meet vessels at three o'clock in the morning, cannot always see everything or anticipate every contingency. Numerous attempts are made to smuggle plants into the State and each year the ever-increasing multiplicity and speed of commercial and private means of transportation add to the difficulty of detecting and excluding foreign pests. No matter what the dangers or the volume of traffic, no more inspectors can be employed than is provided for in the appropriation budget.

It is quite logical that the Plant Board should have a "second line of defense" for, necessarily, some pests must slip in despite all vigilance. This second line of defense is found in the Board's work of nursery and orchard inspection.

The Nursery Inspection Department keeps under continuous inspection all commercial nurseries in the State for a two-fold purpose: first, to detect any new pest before it becomes widely distributed and while its eradication is still possible. In the second place, the constant inspection of the nurseries—with the imposition of quarantines on them when the trees and plants do not come up to a high standard—relieves the grove owner or planter from having to start his commercial operations under the handicap of plants heavily infested with white fly, scale-insects and other pests. This work requires the undivided attention of a chief nursery inspector and fifteen highly trained assistants for there are (statistics for the fiscal year ending June 30, 1927) 62,522,041 trees and plants in the 1,483 commercial and 862 non-commercial nurseries in the State.

One of the outstanding accomplishments of the Plant Board has been its campaign to eradicate citrus canker. This disease found its way into Florida about 1912 and, during the succeeding five years, threatened to wipe out the citrus industry. In cooperation with Bureau of Plant Industry, United States Department of Agriculture, an active campaign against this disease was inaugurated immediately after the creation of the Plant Board in 1915 and has been waged relentlessly ever since. From 1914 to 1917 the losses from citrus canker were heavy but gradually, one after another, foci of infection were wiped out and recurring outbreaks of the disease became less frequent. For the past ten years commercial damage from this disease has been kept practically at zero. Occasional infections are still discovered and are as promptly satmped out by the Board's inspectors.

Because of the extreme virulence of citrus canker and the many opportunities for its reintroduction, the citrus industry may look forward to having this menace hanging over it for all time to come.

A force of thirty expert "canker hunters" is continuously engaged in systematically patrolling the citrus groves of the State. However, as there are approximately 20,000,000 grove trees to be inspected, it takes these men three years to make just one hasty inspection for citrus canker! It is frankly admitted that this force is totally insufficient for safety. It is nothing but a miracle or act of Providence that outbreaks of the disease have thus far been discovered before they assumed large proportions. There may easily be, at this moment, one or more unknown areas of infection of such magnitude as to require the expenditure of a hundred thousand dollars for eradication.

Experience has shown, time after time, that it would be economy for the State to expend more for grove inspection and, as a result, less for eradication; for when a canker outbreak has the opportunity to spread for several months—before the inspectors find it—the cost of stamping it out is invariably from $15,000 to $50,000.

It would perhaps be interesting to discuss the campaigns which have been or are being waged by the Plant Board to eradicate or limit the spread of bee diseases and of such pests as the coconut bud-rot, banana weevil, sweet potato weevil and others but time does not now permit.

In conclusion, it must be pointed out that changing conditions have greatly increased and complicated the difficulties of the Plant Board in protecting the State's vital industries and, regrettable though it may be, the State itself has not afforded the Board opportunity to keep pace with the changing conditions and new dangers. As a concrete example: Funds were not appropriated for the Board to continue its campaign against the mosiac disease of sugar cane with the result that this disease has, during the past eight years, steadily made its way from extreme northwestern Florida to all parts of the State and right into the Everglades, where it is proposed to build a great sugar industry!

Not all of the difficulties are chargeable to lack of appropriations. The State has failed to provide inspectors of the Board with police authority, quite necessary, we believe, if certain situations are to be dealt with.

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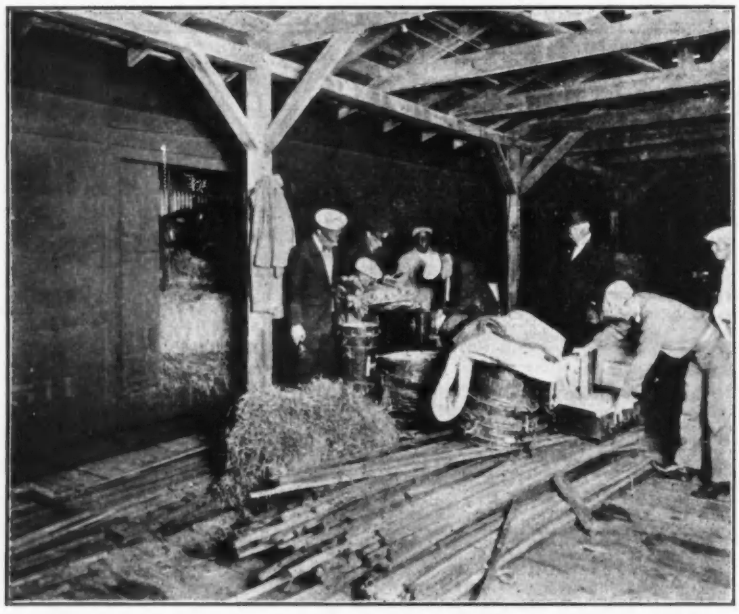

Plant Quarantine, Customs, Immigration and Federal Veterinary Inspectors examining contents of car, containing race horses, arriving at Key West from Cuba. Plants, fruits and vegetables in great variety are found in these cars. For example, much sugar cane is confiscated by the inspectors as cane is carried for the horses to chew on, to quiet their nerves, while the car ferry boat is at sea.

Water Injury to Citrus Trees In Florida

By Dr. Arthur S. Rhoads, Associate Plant Pathologist, Cocoa Laboratory of the Florida Agricultural Experiment Station.

Various forms of water injury to citrus trees as a result of lack of drainage, unusual rises of the water table, over-irrigation, etc., have been reported from citrus-growing countries throughout the world. Water injury results in various types of dying and rotting of the roots and root crowns, with which a number of different saprophytic and semi-parasitic fungi may be associated. The injury to the root system may vary from the loss of many of the fibrous feeding roots to the death of the ends of more or less of the smaller woody roots, the killing of large roots, and the rotting of the root crowns. Such injury to the root system may manifest itself in the top of the tree by reduction of growth, smallness, sparseness and yellowing of the foliage, dropping of fruit, more or less complete defoliation, abnormal blooming, and the dying back of twigs, branches, or even the entire tops of the trees.

Situation in Florida

Many of the citrus groves in Florida, especially those on the lower East Coast, have been planted on land that is inadequately drained, or on land that may have adequate drainage for average years but not for the excessively rainy periods that inevitably occur from time to time. In many instances, the soil moisture problem is further complicated by the occurrence of more or less closely underlying formations of hardpan, marl or rock, which greatly restricts root development and impedes drainage, and by the occurrence of drouthy periods following unusually wet ones. The underlying, impervious substrata may occur more or less uniformly throughout the grove, or merely locally, often forming basins in which accumulated water may injure portions of the grove, groups of trees, or even individual trees, irregularly. In other instances, grove plantings may not be underlaid by any layer impervious to the passage of water but may suffer from decided rises of the water table during the rainy season of the year, especially when the occurrence of one or more fairly dry years has induced the root systems to extend themselves fairly deeply into the subsoil.

It is of interest to note in connection with water injury that the sour orange rootstock is much more resistant to water injury than either the sweet seedling or rough lemon rootstocks. This appears to be due to the more shallow rooting tendency of the sour orange rootstock.

Hundreds of citrus trees of all ages are removed annually in Florida on account of dead or rotted roots as a result of water injury, most of them being taken out when they should still be in their prime. In addition, hundreds of acres of grove remain more or less unproductive as a result of various types of water injury. The planting of poorly drained land to groves is by no means an outstanding feature of the citrus industry in Florida, however, for a study of the fruit growing industry throughout the United States reveals numerous attempts to establish orchards in poorly drained situations in practically all the states, except possibly the arid western ones.

Fig. 1.—View of portion of 12-year-old Lue Gim Gong orange grove that has become stunted, unproductive and half dead as a result of chronic water injury. Compare with normal growth of trees of the same age shown in figure 2.

Types of Water Injury

Water injury may be classed under two general types, namely the chronic type and the occasional or periodic type. By the chronic type is meant the injury to trees in decidedly low and poorly drained situatinos where conditions of excessive soil moisture have been more or less consistently prevalent throughout their lives, or at least after they have developed to such size that their root systems have penetrated well into the subsoil, where it is usually too wet during a large portion of the year for further root development. By the occasional, or periodic, type is meant the injury to trees that have made a normal growth and development for a number of years and then have the root systems injured more or less suddenly by abrupt rises of the water table during seasons of unusually heavy rainfall. Combinations and gradations, of course, exist between these two arbitrarily defined types.

Chronic Type of Water Injury

Chronic water injury to citrus trees may be recognized by the "off color", or pallid appearance, and small size of the foliage characterizing the trees in the lower situations as compared with the deep green color and normal size of the foliage of trees on higher or better drained

land. After a few years of chronic water injury, in mild to moderate form, the affected trees are found to be smaller than other trees of like age and kind in nearby portions of the grove where good drainage exists. Instances can often be seen in groves where trees in the low, or poorly drained, situations gradually decrease in height and size of top and become more yellow and less productive progressively from the well-drained portions to the poorest drained portions. In severe cases, the trees rendered small, unproductive and stunted from chronic water injury (fig. 1) present a striking contrast with those in well-drained portions of the same grove nearby, where the trees have made a normal growth (fig. 2).

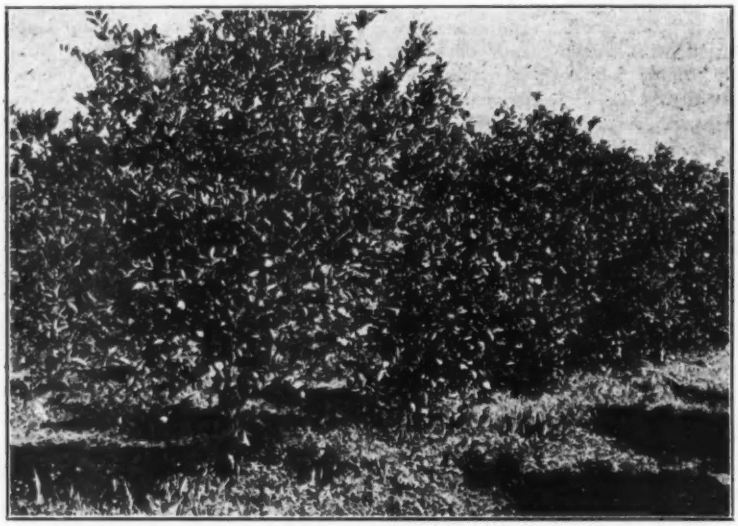

Fig. 2.—View of well-drained portion of 12-year-old Lue Gim Gong orange grove adjoining the inadequately drained portion shown in figure 1. These trees have made a normal growth and development and are highly productive.

In cases where the poor drainage conditions become aggravated and the root system more seriously injured by a marked rise in the level of the water table, much of the foliage drops from many of the twigs and branches and the tops of the trees die back in proportion to the extent to which their root systems have been injured. The leaves developed subsequently invariably are abnormally small. Where one or two fairly dry years occur, with perhaps a more even distribution of the rainfall, new roots may be developed and a certain amount of new and more vigorous growth may be put out by the tops, in case the trees have not been killed outright. In the majority of cases, however, where trees occur in situations so poorly drained that their root systems tend to become injured by undue accumulation of water in the soil, the injury to the root systems is apt to be repeated more or less every year or so during the rainy season, with but few exceptions. Trees that have had their root systems repeatedly killed back by excessively wet soil conditions come to have the few roots that remain living confined near the surface of the ground and are very readily injured by extremes in soil moisture conditions.

In cases where drainage ditches have been cut through poorly drained sections of groves the first row of trees on either side of the ditch often make a better development, the second row from the ditch usually decidedly less, while the third and succeeding rows may show little or no appreciable benefit. The limitations imposed upon the growth of citrus trees by inadequate drainage indeed operate in a very striking manner. Trees retarded in development by inadequate drainage constitute decidedly unprofitable areas of grove, yet, hundreds of acres of such groves suffering from chronic water injury are maintained in Florida.

Where special measures are resorted to in order to improve the drainage conditions, such as ditching or pumping out the water, the trees usually will make a fair degree of recovery if they have not been injured too severely before these corrective measures are undertaken. Under these improved conditions, the trees may develop a fair top and a small crop of fruit within two or three years and should continue to improve if good drainage is maintained.

Where no special measures are taken to improve drainage, however, repeatedly injured trees may become so weakened and devitalized that the tops die back extensively and very little new growth is developed. Under such conditions, the trees usually die back until the top, in each case, has struck a balance with the greatly reduced root system. In such a half dead, but balanced condition, they may linger along for a number of years, only to be killed during the first unusually wet period.

Occasional or Periodic Type of Water Injury

In the occasional, or periodic, type

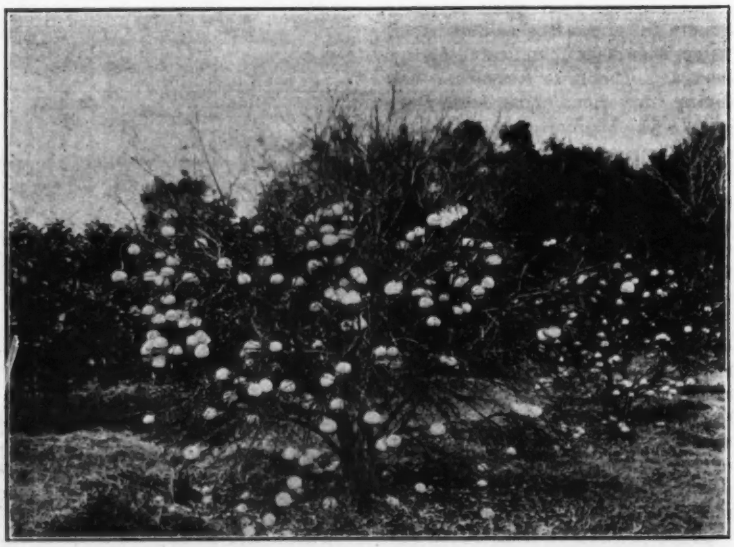

Fig. 3.—Two 12-year-old grapefruit trees that were making a good development in a low situation in a grove until an unusually wet spell caused the soil to remain saturated sufficiently long to defoliate and kill the trees.

of water injury the effect upon the trees is extremely variable according to the age of the trees, kind of rootstock, nature of the soil, subsequent soil moisture conditions, and severity of the injury. In the case of trees that have previously made a good growth and development, prolonged saturation of the soil may result in the sudden death of the trees, which may take place so suddenly that the foliage withers and dries up on the trees within a few weeks, leaving them appearing as though they had been scorched by fire. Trees less severely injured may drop the greater part, or even all, of their foliage, leaving most of the fruit standing out in bold relief for the time being (fig. 3). The fruit remaining on such trees withers as the defoliated twigs gradually withdraw the water from it and begins falling shortly after the trees become defoliated.

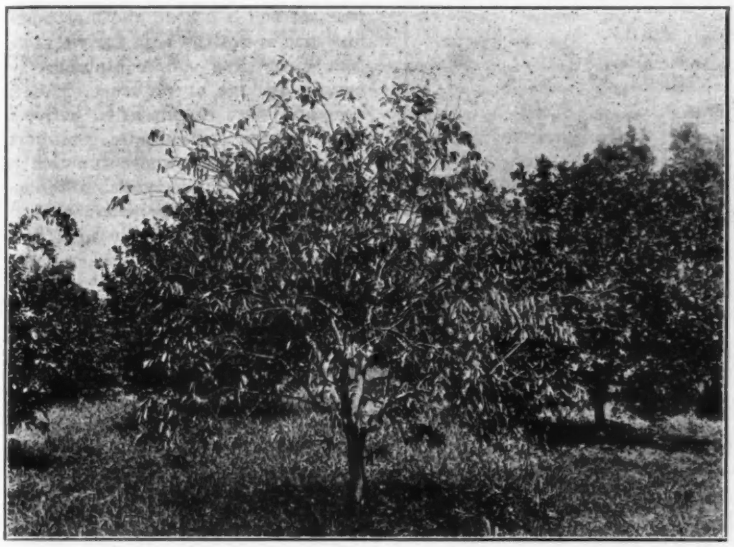

Fig. 4.—Pronounced wilting and curling of the foliage of a 6-7-year-old Lue Gim Gong orange tree moderately injured by excessive water during the fall. This tree has lost much of its foliage and, in contrast to the uninjured trees, failed to develop bloom and the flush of new growth the following spring, thus behaving like a so-called "blighted" tree.

In poorly drained soils underlaid by an uneven platform of coquina rock, moderately injured trees often die back in very irregular fashion, apparently by reason of the fact that certain of the individual roots, or the roots on one side of the tree, were the principal ones to be injured. In such cases, one or more limbs on that side of the tree, which were dependent upon the root or roots that became injured, drop their foliage and fruit and die within a short time after the injury and the balance of the tree declines more slowly. The occurrence of basins or pockets in the rock or other impervious substrata, which may retain water longer than the surrounding soil, appears to be the explanation of this irrigular dying of the tops of water-injured citrus trees.

Many normally growing citrus trees that are suddenly injured to even a moderate extent by excessive water during exceptionally rainy periods commonly develop a marked wilting and curling of the foliage, typical of trees suffering from drouth, a month, or often longer, after the injury. The trees exhibiting this delayed effect of water injury may occur on fairly level land or about the margins of local depressions or low areas, where the trees in the lowest situations exhibited a more or less severe wilting and dying back earlier. This delayed wilting may become evident at any time from a few weeks to a few months after the period when the soil was saturated, the exact time depending upon the extent to which the soil dries out later. With the subsequent drying out of the soil, a pronounced wilting of the foliage may develop and more or less defoliation may occur (fig. 4).

Trees that have been making a good growth for a number of years and then have the root systems injured but moderately by excessive water may recover if favorable soil moisture conditions prevail. However, in many cases, another wet spell follows within a short time or a prolonged drouth may occur within a few months after the root systems have been somewhat damaged by excessive water, thus intensifying the previous injury to the root systems. Trees thus doubly injured quickly develop a chronic wilting, lose a large part of their foliage and die back rapidly. The more or less defoliated branches of such trees usually develop an abnormally profuse bloom in the spring, but set very little fruit since many of the branches that become devitalized as a result of the failure of certain roots to support them may die entirely soon after blooming. Repeated injury of trees by excessive water, especially when the injury becomes intensified by the subsequent occurrence of drouth, may result in the wiping out

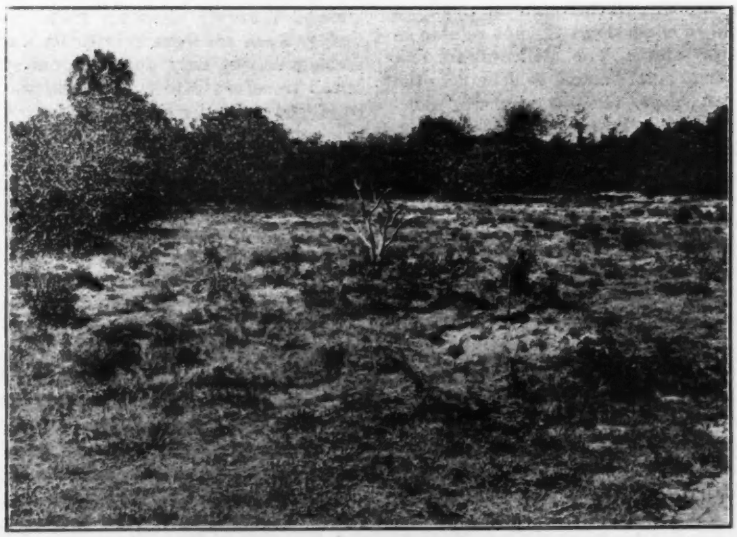

Fig. 5.—Large area of a 12-year-old mixed grove, in which the trees shown in figure 3 occurred, wiped out as a result of repeated water injury. A few half dead trees shown in the rear of this area, adjoining the block of older trees shown in the background, should also have been removed. The dead trees in this area have been removed and the area replanted, after cutting a drainage ditch.

of grove areas of considerable size (fig. 5).

In the trees that have been defoliated but moderately as a result of water injury, the wilted and curled foliage remaining soon loses its luster and appears dull and lifeless. In the spring, such trees fail to develop a normal flush of growth when the other trees do, bloom a month or so after the regular blooming period, and may continue to bloom a little from time to time until midsummer, thus behaving like trees affected by "blight". Such trees often continue to wilt and decline irregularly regardless of whether they are cut back or not. They decline in essentially the same way as typically blighted trees and are indistinguishable from them in their general appearance. In fact, the death of such trees is frequently attributed to that mysterious chronic wilting commonly termed "blight" by growers who have failed to consider the extremes of soil moisture conditions that, in reality, were the primary cause of the decline and death of their trees.

Cause of Water Injury

In order for plants, other than swamp-loving or aquatic ones to function and develop properly there must be a supply and interchange of air in the soil, from which oxygen may be obtained by the roots, and citrus trees are no exception to the rule. In the process of respiration, which is as necessary in plants as it is in animals, the roots, as well as other parts of the plant, take in oxygen and give off carbon dioxide. The carbon dioxide from the air in the soil unites with water, forming carbonic acid, which assists in the solution of mineral matter not soluble in water alone. The delicate feeding rootlets must be able to penetrate the soil freely to reach the films of moisture, which cling to the soil particles, and absorb through their cell walls the plant food that has gone into solution and pump it into the plant circulation. A soil, therefore, will not make a good environment for root growth when the air supply in the pore space, or space between the individual soil particles, is driven out by saturation or waterlogging.

The type and condition of the soil have much to do with the amount of air available. In loose, sandy soils the total amount of air space may be comparatively large, while in compact clay soils the total amount of air space may be very small. In an experiment by Hutchins and Livingston with a certain clay loam soil it was found that the oxygen-supplying power of the soil was 1,000 to 1,300 cubic millimeters per hour when moistened as for good growth of plants, but was reduced to 590, or one-half as much, when quite wet, and was only 20, or about one-sixtieth as much, when wet and packed. Heavy soils also have a relatively high capacity for moisture and are relatively slow in drying out after they have once become saturated.

Fig. 6.—Taproot developed by a 12-year-old Lue Gim Gong orange tree on sour orange rootstock in marly subsoil in which the water table is permanently high. Note the stunted development and repeated branching of this taproot resulting from the physical limitations imposed upon its growth; also the repeated killing back of the root divisions by sudden rises of the water table.

Aeration is an important factor in many forms of citrus root diseases. When soils are wet for prolonged periods the water completely fills the air spaces, crowds out most of the air and prevents other air from entering. Such soils are said to be waterlogged. Not only do the roots of ctirus trees cease to function in waterlogged soils but, in many cases, they actually die in consequence of waterlogging and then rot, or at least become weakened to such an extent that they are readily attacked by various root disease organisms. Many parasitic organisms probably require less oxygen than the roots they attack and can grow well in saturated soils that would injure the roots. However, even if citrus roots do not actually die and rot, they cease to function in soil saturated with water and are, so to speak, out of commission until the soil dries out sufficiently for some aeration to occur. When the roots become inactive the trees also stand still and fail to grow and produce as they should. It has even been shown by experimental work that the breathing pores of the leaves of various plants tested close when root activity ceases on account of waterlogging of the soil.

Good aeration of the soil is essential not only for the proper functioning of citrus tree roots but also for the proper functioning of the valuable soil micro-organisms, without which successful agriculture would be impossible. Many people think that the soil is a dead and inert mass but such is not the case for we know that every live soil, containing the proper amount of moisture, is in a constant state of intensive activity, every square inch containing millions of useful bacteria whose function it is to digest, or make available, the ingredients necessary to produce plant growth. For example, the nitrifying group of bacteria change the ammonia into nitrites and these into nitrates, which can be absorbed and utilized by plants. In waterlogged soils the work of this group of bacterial may be checked even to the extent of denitrification. Another group of these bacteria have the power to cooperate with leguminous plants in changing, or "fixing", the inert nitrogen of the air into the nitrates so costly and necessary to plant nutrition. Other groups of bacteria transform humus into simpler products capable of being utilized by plants for their development. Just how long these useful bacteria can exist in saturated soils has not been ascertained but they are known to live in running water for much longer time than in stagnant water. Where there is reduced or improper bacterial activity in soils, tree growth and fruit production is retarded and a number of obscure physiological troubles may arise.

Aside from the purely physical limiting of the taproot by the underlying layer of hardpan, marl or rock, it may be limited alone by the closeness of the water table to the surface. In such cases the taproot ends very abruptly, dividing into a number of rapidly tapering branches (fig. 6). In soils with a more or less fluctuating water table the divisions of the taproot may elongate during dry years but are sure to be killed back when the level of the water table rises during the next extremely wet period. New roots will then develop from the callus formed at the margin of the living tissue as soon as the soil becomes sufficiently dry to permit their development. The taproots of citrus trees in low, poorly drained situations may thus alternately be killed back and devel-

op new roots repeatedly. In more severe cases of water injury not only the majority of the taproot but many of the deeper lying lateral roots may be killed off by a sudden rise in the water table. New roots may subsequently develop from the callus formed at the margins of the living areas if the root systems have not been injured so severely that the trees die outright (fig. 7). Instances can be seen where two or three different root systems have developed successively on water-injured trees, each one nearer the surface than the preceding system, the lower roots having been rotted off.

Injury to the root systems of citrus trees as a result of too high a water table becomes an especially important problem on those soil types which are inclined to be drouthy during dry weather since dry weather frequently follows closely upon periods of unusually wet weather. In such case, with the root systems of the injured trees reduced to the point where the trees no longer can absorb sufficient water to maintain their tops, the subsequent period of drouth greatly intensifies the injury, many trees often being killed outright by this adverse combination of soil moisture extremes.

The wilting and curling of the foliage of citrus trees whose root systems have been injured by excessive soil moisture is indistinguishable from that exhibited by trees on high, well-drained land that are suffering from drouth. In reality, both groups of trees are suffering from drouth, which, in the former case, is induced indirectly and, in the latter case, is induced directly by a deficiency of soil moisture. While it may sound like a paradox to state that trees in saturated soil may be suffering from lack of water, such is in reality the case since a large number of the roots functioning in the absorption of water have been killed off and the trees, with their reduced root system, can no longer secure enough water to satisfy its requirements, regardless of how much may be in the soil.

Preventive and Remedial Measures

A large proportion of the citrus grove failures recorded on poorly drained land can be attributed directly to either the entire omission of any kinds of drains or to drains of insufficient capacity or depth to remove the stagnant, acid waters or allow free access of air to the roots. Drainage is, therefore, of the utmost fundamental importance to the citrus grower. Where it does not exist naturally it must be supplied artificially.

In the selection of grove sites, trees should not be planted on land that is inadequately drained or too closely underlaid by hardpan, marl or other impervious layer which impedes drainage. Many Florida soils are rather low-lying and often difficult for the individual grove owner

Fig. 7.—Large sour orange roots killed back for several feet as a result of a sudden and prolonged rise of the water table. Note the new fibrous roots developed from the callus formed at the margin of the part remaining living, many of them growing under the old rotted bark and sloughing it off.

to drain by reason of the lack of slope to the land. Moreover, the rainfall fluctuates widely from season to season and from year to year. Heavy periods of rainfall often occur in late summer and fall, whereas during the winter and spring months there is commonly a decided shortage of rainfall.

Before planting a piece of low-lying land to grove, due allowance should be made for extremes of rainfall which are sure to occur from time to time. Many grove sites suffer from decided fluctuations of the water table and those that may be dry, even to the point of being deficient in moisture during the dry season of the year, may become excessively wet during prolonged rainy periods. The possibilities of a piece of land, or of adequately draining a piece of land, for a grove, therefore, should not be judged from an inspection during the dry season of the year, but rather during the rainy season.

In the preparation of a grove site for planting, where drainage is necessary, an adequate system of ditches should be cut. These should be of sufficient depth to carry off the excess water during the rainy season of the year, allowing an ample margin of safety to take care of unusually wet seasons. Before attempting a drainage project of any considerable size, a competent engineer or surveyor should run the proper levels. Where it is necessary on poorly drained land to plant the trees on ridges, the middles should be as deep as possible and the beds as high and broad as they can be made, so that the trees will, at all times, have plenty of well-developed roots above the line of the maximum level of the watersoaked soil.

The flatwoods, low hammock, prairie, or other level lands are by no means the only ones that require drainage. In rolling lands there are often low places where underground seepage from higher points will result in the accumulation of sufficient water to injure the trees periodically. Ditches cut along the upper edge of such locations, in such a way as to divert the flow around the affected area, will often prove beneficial. In some instances, lakes, ponds and swampy areas adjoining a grove are at different levels, in which case connecting these up and allowing the water to assume its lowest level will often greatly improve the drainage conditions in a grove.

Many growers often make the mistake of planting their grove first and then finding themselves in the position of having to provide adequate drainage afterwards. Or, perhaps the drainage system provided suffices only for the first four or five years, or until the roots have penetrated to, or nearly to, the depth of the ditches. The inadequacy of the drainage system may become apparent first by the occurrence of one of the inevitably excessively wet seasons, which will result in yellowing, wilting and loss of foliage, dropping of fruit, dying of branches, etc., caused by soured and dead roots.

Groves already established on inadequately drained or ridged land, where the trees are suffering from water injury, should have the drainage system improved by installing an efficient system of drains, cleaning out or deepening the already existing ditches, cutting additional ones, or by combinations of these measures. Groves so situated that there is not sufficient rapidity of run-off from the ditches to take care of the surplus water should have in-

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415 Stovall-Nelson Building
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Telephone ____ 4819

S. L. FRISBIE, Editor and Manager

FRANK KAY ANDERSON ____ Assistant Manager
A. G. MANN ____ Production Manager

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NEW YORK OFFICE
350 West 55th Street
Phone Columbus 8244
FRED SHERWOOD CLARK, Manager

CHICAGO OFFICE
28 EAST JACKSON BOULEVARD
Telephone Harrison 1233
William Robert Shannon, Manager

CITRUS CALENDAR FOR MAY

Timely Suggestions for Grove Work During the Present Month

Prune late bearing trees as soon as crop is removed.

Spray with oil emulsion or fumigate for control of White Fly and scale.

White fly may be controlled by a fungus parasite; calculate the number of cultures that you will need; write to the State Plant Board, Gainesville, for them.

Cottony cushion scale may be controlled by the Vedalia or Australian lady beetle.

Spray grapes with 4-4-50 bordeaux mixture plus 1 pound of lead arsenate to 50 gallons of spray to control scab and chewing insects.

THE CITRUS CLEARING HOUSE

Following the growers' mass meeting in Orlando on April 18, when the preliminary work of the Committee of Fifty was unanimously endorsed by the growers present, activities have continued toward the organization of the proposed Growers' Clearing House.

The first important step following the Orlando mass meeting was the announcement by General Manager C. C. Commander of the Florida Citrus Exchange that the Exchange would sign up its entire membership in the proposed clearing house, provided an equal number of boxes controlled by non-Exchange members is secured by the Committee of Fifty.

On the basis of a control of thirty per cent of the crop by the Exchange, this would mean that another thirty per cent must be signed by non-Exchange members. This would give the proposed clearing house a total of sixty per cent of the crop, the goal set by the leaders as the minimum amount which must be secured by July 10 in order to make the plan workable.

Following the announcement of the Exchange attitude, meetings were held at Bartow and Winter Haven, at which approximately two and one-quarter million boxes of fruit were signed up by the growers themselves. Just what portion of this total is included in the Exchange membership already guaranteed by the action of the Exchange directors is not known.

Other meetings are scheduled for different points in the citrus belt. These meetings will be addressed either by M. L. Corey, the government representative in charge of the membership campaign, or by J. C. Morton, of Auburndale, one of the most active leaders in the clearing house movement. Should future meetings be attended with the success achieved at the two initial meetings, it is evident that the 60 per cent goal would be reached without difficulty. However, it has not yet been demonstrated to what extent other sections may follow the lead of the Polk county meetings.

The fate of the clearing house project is clearly in the hands of the growers themselves. They can make or break the proposition. If the growers unite in sufficient numbers, no outside interest of whatever nature can operate to thwart the success of the clearing house plan, even should such desire exist. Up to this time, there has been no evidence of any such desire. So far as public utterances are concerned, shippers and marketing agencies have expressed nothing but favorable sentiment toward the purposes aimed at by the Committee of Fifty in its proposal to establish a clearing house.

As The Citrus Industry sees it, the matter is solely in the hands of the growers themselves. If a sufficient number of growers want it, and are willing to sign the contracts, Florida will have a Growers' Clearing House. If such a clearing house is not established, it will be through antagonism or lack of interest on the part of the growers themselves. There has been no sign of antagonism. After a few more meetings have been held, over wider territory, it will be possible to better gauge the extent of the interest on the part of growers and whether that interest will manifest itself in the shape of signed contracts.

The proposed Growers' Clearing House is purely a growers' movement, of, by and for the growers. It remains for the growers to say whether it will be a success or a failure. Leaders in the movement express themselves as seeing but one possible outcome—unqualified success.

THE HORTICULTURAL MEETING

The recent meeting of the Florida State Horticultural Society at Winter Haven, in point of both attendance and interest, was by far the most successful in recent years. Possibly the location, in the very heart of the citrus belt, had something to do with the matter of attendance. Then, too, with interest centered on the activities of the Committee of Fifty, born but a short time before at Winter Haven, and with headquarters in that city, may have helped.

But, whatever other factors may have contributed to the attendance or interest, it must not be overlooked that the work of the officers and program committee did much, and probably more than all else to contribute to the success of the gathering. That the membership recognized this, is shown by the unanimous reelection of practically all of the officials, even in the face of the expressed desire of some of them that they be relieved of their responsibilities.

The Florida State Horticultural Society, now more than forty years a major factor in the horticultural development of the state, is quite as strong today as it has ever been in the estimation of leading horticulturists. As a factor in the development and protection of the citrus industry, the Society has achieved much in the past and promises much for the future.

Among the speakers at the Winter Haven meeting were many of the leaders in horticulture in Florida. These speakers covered subjects of timely interest presented in an interesting and capable manner. Some of these papers are presented to readers of The Citrus Industry in this issue. Others will follow in succeeding issues until practically every subject bearing upon citrus topics and matters of general value to citrus growers will have been printed in these columns.

THE CLOSING SEASON

At the time of this writing, May 8, it is estimated that not more than 900 cars of grapefruit are left in Florida for shipment. As recent shipments have ranged well above three hundrde cars per week, it will be seen that if such heavy movement continues, the crop will be cleaned up by June 1, or very shortly thereafter.

Practically all of the fruit now going forward and that left in the state is late bloom fruit, but this is now well matured and of excellent quality, selling at an F.O.B. price of from $2.75 to $3.50.

Orange shipments are just about cleaned up, only scattered cars here and there remaining for shipment. What few sales of late Valencias are being made are at the F.O.B. price of $6.00 to $6.50 per box.

According to semi-official records there have been, up to May 5, 34,651 cars of citrus shipped from the state during the season, with, say, another thousand cars to go.

On the whole, the season about to close has been a most satisfactory one for both growers and shippers. The crop, while small, has been of fair quality throughout the season, and has commanded the best prices received for any Florida citrus crop in years. Based on average price received, the 1927-28 crop probably set a record for all time. While the quality of the crop could have been materially improved, the fact remains that it was above the average, and auction prices throughout the season saw Florida Fruit consistently bringing a premium over fruit grown in other sections.

In retrospect, both growers and shippers may well feel that the season has been one of more than ordinary satisfaction. This is particularly true of those who had fruit of exceptionally good appearance, well graded and attractively packed.

WITH THE CANDIDATES

There are three candidates for state office in whom citrus growers are showing unusual interest by reason of the fact that these candidates are so intimately associated with the industry and its welfare.

These candidates are John S. Taylor of Largo, several times state senator and now a candidate for governor; Nathan Mayo, a candidate for re-election as commissioner of agriculture; and Frank Kay Anderson of Altamonte Springs, a candidate for railroad commissioner.

Mr. Taylor is a heavy grove owner and was for years a leading packer of Pinellas county. He is known as one of the leading factors among citrus growers.

Mr. Mayo, during his term of office, has been keenly interested in citrus problems and has taken an active part in the efforts being made to solve those problems.

Mr. Anderson, for years connected with citrus marketing agencies and in close touch with transportation problems and railroad rates, is probably personally acquainted with more growers of the state than any other man. His connection with Florida newspapers and other publications also has added to his acquaintance.

All of these gentlemen stand very highly with the growers and others connected wih citrus interests, who are watching their campaigns with interest. These candidates have the support of many growers. It is felt that, having a personal interest in growers' problems, they could, if elected, be counted upon to give their best efforts toward the solution of those problems.

After all is said and done, the Growers Clearing House depends upon the growers themselves. Neither the shippers, the bankers, the newspapers nor the business men can make or prevent its success. Only the growers can do that.

A proper application of insecticides now may mean the difference between bright and russet fruit next winter—and that may mean the difference between profit and loss on your grove.

Edgar Wright, until three years ago editor of the Florida Grower, and since that time mayor of New Port Richey, has established a new fruit publication known as the Florida Fruit World. The new publication is to be issued monthly and is sent out under a Tampa date line. The first number was issued May 1 and contained sixteen pages. Mr. Wright announces that the Florida Fruit World will also devote some attention to the search for oil in Florida.

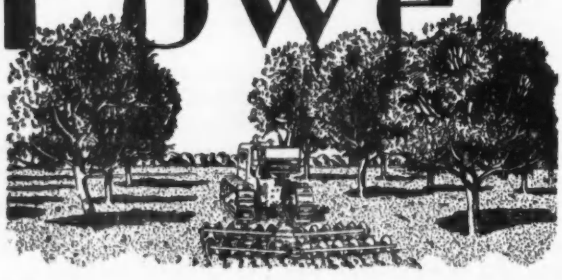
Florida growers received record prices for their 1927-28 crop. If this record is to be repeated next year, it will be because a greater percentage of bright fruit is grown. We can't count on California having two off years in succession.

The heavier the percentage of bright fruit grown by Florida growers, the greater will be the profits when the final returns come in next year. NOW is the time to make your plans to produce bright fruit in YOUR grove.

Quality fruit cannot be grown without adequate plant food nor without proper attention to the sanitation of the trees. Fertilizer and insecticides are among the most important as well as the cheapest investments the grove owner can make.

Some growers last year neglected the fertilizer program because the price of fruit was low. They can't offer the same excuse this year.

You Might Just as Well Have Plenty of Power



Your fruit will grow sweeter, bigger and more uniform on the trees from proper, timely cultivation. Do the work when it needs to be done. A "Caterpillar" track-type tractor will make it easy for you and give you plenty of power for every other job. Its low upkeep cost and long life together with economy of operation will reduce production costs. You can even do custom work when you own a "Caterpillar" and make an extra profit from your neighbors. A convenient purchase plan makes it easy for you to own a "Caterpillar". Write for information today.

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JACKSONVILLE MIAMI
Clewiston Motor Company, Clewiston, Florida

CATERPILLAR

If Your CITRUS TREES Could Talk...

YOU'D hear them asking right now for a feeding of Chilean Nitrate of Soda. This nitrogen fertilizer, applied in May, means bigger, better citrus fruit. An application in the fall brings your trees back to normal condition. An early feeding of Nitrate of Soda in February helps to set a large crop.

An Ex-County Agent Says:

"I have followed the use of Nitrate of Soda as one of our important fertilizing elements for over 20 years. During that time I early reached the conclusion that, properly used, it is one satisfactory source of nitrate for citrus and plant work."

CHARLES D. KIME
Ex-County Agent, Orlando, Fla.

Free Fertilizer Book

Write for our new 44-page book "How to Use Chilean Nitrate of Soda." Gives information about all crops. It is free. Ask for Book No. 1 or tear out this ad and mail it with your name and address.

Chilean Nitrate of Soda
EDUCATIONAL BUREAU
Orlando Bank & Trust Building
Orlando, Fla.

Chilean Nitrate of Soda for Profitable Crops — The Standard Nitrogen

In writing please mention Ad. No. 25E

Citrus Growing On The Muck Soils

By Frank Stirling at State Horticultural Society Meeting

Ultimately a nation's prosperity is based on the soil and the greater the fertility of the soil so will in turn be the greater prosperity of the country. As manufacturers of certain commodities seek locations whereby they may produce their products at the lowest possible cost so we who are interested in manufacturing oranges and other citrus fruits prefer to select locations where a combination of climate, soil fertility and moisture conditions capable of not only producing fruit at a low cost but at the same time produce a quality that will return top prices.

It is my privilege to present this paper based on practical citrus growing on the muck soils of the Everglades, indicating points which I believe are fundamentally sound and which apparently may have a tremendous bearing upon a great revenue producing citrus section in the near future.

To any horticulturist the history of citrus growing in Florida has always been exceedingly interesting and in my travels over the many producing sections of the state my attention has frequently been called to the profitable returns derived from late types of oranges and on the muck lands where a combination of late varieties, preferred rootstalks and other conditions occured these profitable returns from practically mid-summer oranges appear most outstanding. Investigations showed that the muck soils, in sections that are properly drained, would produce regular crops of a splendid quality returning a profitable revenue to the grower and at a cost of production per box less than that from any other section or soil known to the industry, and further research has proved my conviction inasmuch as nature had, on these Everglade soils, abundantly supplied all of the necessary requisites for the growth and perpetuation of citrus trees and their fruits.

We have all learned that in order to be successful both agriculturally and horticulturally several important phases must be observed and they are principally fertile soil, moisture and congenial climate. I have found these conditions prevalent in the soils of the Everglades namely near the edges of the glade lands particularly in the Davie section where pioneering along citrus lines has been carried on over a period of fifteen years and it may be well at this time to say something about the experience of these muck land citrus pioneers.

The first grove planted out on muck lands was put out twenty seven years ago by Mr. Geo. E. Warren who planted a grapefruit grove adjacent to the Miami River. These trees when at an age of nine years produced an average of nine boxes of fruit per tree and one tree produced the same year a total of thirty-two boxes, incidently this fruit was bought by Jaudon Bros. of Miami at $2.50 per box on the tree. Following Mr. Warren's muck planting several growers at Davie put out groves on the muck at that place, Mr. C. A. Walsh, Mr. J. C. Lange, J. R. Cheedle, Chas. Stoddard and others had plantings of late oranges, principally Valencias and Lou Gim Gong put in and in most instances the groves were brought into bearing with no fertilizer or cultivation the only work in the groves being that of mowing the weeds and grass a couple times a year, these groves have produced splendid crops year after year and such crops being harvested as they were during the summer months brought good prices on the market.

It may be interesting to note that the cost of production per box has been at minimum, in fact records show that fruit has ordinarily been produced at a cost not exceeding seventeen cents per box on the tree and while this may sound astounding yet when one realizes that the costs of planting, tillage etc. are cut to the bone it is not at all out of line. To begin with there is no cost of clearing of the land for all that is necessary is to plow the open glades with a tractor, stake the land and plant the trees, this involves a total cost of approximately $80.00 per acre when using trees of five eights to three quarter caliper, in our own case we have, by planting large acreages, cut this cost per acre by fifteen to twenty percent. The trees seem to thrive without any plant food other than that which is in the ground which said ground analyses according to the State Chemist, 3.17 Lime —2.17 Nitrogen—0.18 Phos. Acid—0.13 Potash—1.47 Iron Oxide—0.18 Magnesia—0.38 Soda—0.51 Supl. acid—75.65 Organic Matter and 16.-84 moisture. I have tried several tests to see if any certain mixture would help any and am now trying a mixture of Phos. acid, and potash with a trace of copper sulphate. As the level of the average land is not exceedingly high and as the average water table remains around three to four feet below the surface of the land, a steady moisture condition exists giving the tree ample moisture preventing suffering from drouth, this results in an almost continual growth of the tree and gives a bearing tree in a much shorter time.

The growers in the glades section have prospered, that is they did until the hurricane of Sept. 1926 came along and set them back for a couple of years and in most cases the plantings have been made in the muck lands adjacent to Lake Okeechobee, west of Ft. Lauderdale and in Dade county on a not inconsiderate scale, there are at this time several hundreds of acres being planted by various interests and myself and associates are putting in a grove that will be, when completed some twenty-six hundred acres, and we are doing this because of the reasons set forth, namely to produce at a low cost. To the uniniated or even to you practical experienced citrus growers the statements made may seem Utopian and to the average citrus grower may sound ridiculous but to those of us who have delved into the potential possibilities for growing citrus on these muck soils it is obviously true. The analysis of these muck soils as indicated clearly indicates the presence of the necessary plant foods in sufficient quantities, inasmuch as the groves made in this area were planted, developed and matured without an ounce of fertilizer. Many tests have been made during the past ten years with various fertilizers and even the most discriminating citrus men could scarcely detect any differentiation, however I am of the opinion that after the tree has become older it might be profitable to add potash in order to increase the

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The Nursery Inspection Situation

By J. C. Goodwin, Nursery Inspector, State Plant Board, at Horticultural Society Meeting

The purchaser of a plant is rightfully entitled to receive a plant that is free from especially injurious insects; by the same token, a plant sold, delivered and planted is entitled to an opportunity to flourish and fulfill its mission unhampered and unhandicapped by myriads of pests. This, then, is the mission of the Nusery Inspectoon Department of the State Plant Board: to keep Florida nurseries under constant inspection to prevent the spread of especially injurious pests on nursery stock. Among the numerous ways that plant pests are disseminated, nursery stock can be placed in the front rank. When an infested plant is taken from a nursery and planted out, the host lives and carries the pest over from one generation to another. In a nursery where the numerous plants are in close proximity to each other, it is easy for a pest to become established. The field inspectors attached to the Nursery Inspection Department, in their regular routine inspections, carefully inspect the stock in the nursery and thus discover outbreaks while they are still in their incipiency. An outbreak discovered in its beginning will prevent the pest being distributed not only over our own state but the other states as well because our nurserymen are today shipping material to every state in the Union and to many foreign countries.

There are 2,345 nurseries in this state, according to the last annual report, June 30, 1927. A few have retired from business since this date, but others have entered business and the total nurseries in business in this state today is not far from the figure as of June 30. There were embraced in the 2,345 nurseries approximately 10,000 acres of ground and our records show a total of 62,000,000 plants under inspection. While the acreage in citrus nurseries is double that of ornamental, yet the number of plants in each is about the same. These figures do not include the latest acquisition to our horticulture in this state, the production of narcissus bulbs on a large scale. When the Federal Department of Agriculture imposed the restrictions on foreign bulbs, they also imposed restrictions on the interstate movement of certain bulbs. In order to meet the interstate regulations and afford our people an opportunity to reap the harvest, the Nursery Inspection Department of the State Plant Board undertook to inspect bulbs and thus permit the growers to secure Federal certification. On June 30, 1927, we had under inspection over 50,000,000 bulbs in the hands of 71 growers. Over two-thirds of the bulbs produced in the United States last year were produced in Florida. On the spring inspection the number of growers had increased to 90 and others have signified their intention of growing bulbs, either as a sideline or as a major crop.

Now that we have had a glimpse of the work performed, let us consider the how and why of the matter. For the sake of efficiency, the state is divided into inspectional districts. There are 12 such districts now. Each district is in charge of a field representative who has a complete list of the nurseries within his territory and makes inspections of same at regular intervals. Our Assistant Nursery Inspectors are all trained men with years of experience in inspectional work and fully appreciate their responsibility in the protection of our horticultural interests. The size of the district will depend on the number of nurseries and acreage involved in the area. When an inspector enters a nursery, he goes there for the purpose of ascertaining what pests are present. He carefully dons his one piece inspection suit when beginning his work in a citrus property. The inspection is not made the same as you would go out and look over a field of grain. The nursery is inspected systematically and carefully. The inspector goes up one row and down another, constantly on the alert, scrutinizing each and every plant. After the inspection has been completed, the inspector very carefully removes his inspection suit and disinfects same in a solution of bichloride of mercury at a dilution of 1 to 1000. This precaution is taken to prevent the inspector from being a distributor of the very thing he is trying to find.

Before leaving the nursery, the inspector makes out a detailed report on the conditions prevailing and this report is mailed to the Nursery Inspection Department at Gainesville. It is upon the findings of the field inspector, together with such other information as may be on record, that the Nursery Inspection Department bases its action. During the fiscal year ending June 30, 1927, it was found necessary to impose restrictions on nurseries, either a portion of the nursery or the entire nursery, 1,080 times. In some instances, the same nursery would have restrictions imposed several times during the year. A quarantine is the last resort —it is invoked after other methods of securing action on the part of the nurserymen have failed. When our field representatives note the presence of some of our more common insects, the nurseryman is advised of the fact and is given an opportunity to clean-up in order to prevent a quarantine at a subsequent inspection. Most of the nurserymen seem to appreciate this word of caution and have cleaned up.

Upon receipt of the report from the field inspector, the nurseryman is advised of our action and the nurseryman is afforded an opportunity

Continued on page 26

For Real
Scale Control
Because of its wide margin of safety VOLCK can be applied to your trees in sufficient strengths for real control of Scale and other insect pests during the period when the Scale hatch is at its height. No other spray combines safety and effectiveness in the same degree.
Talk with your nearest dealer
CALIFORNIA SPRAY-CHEMICAL COMPANY
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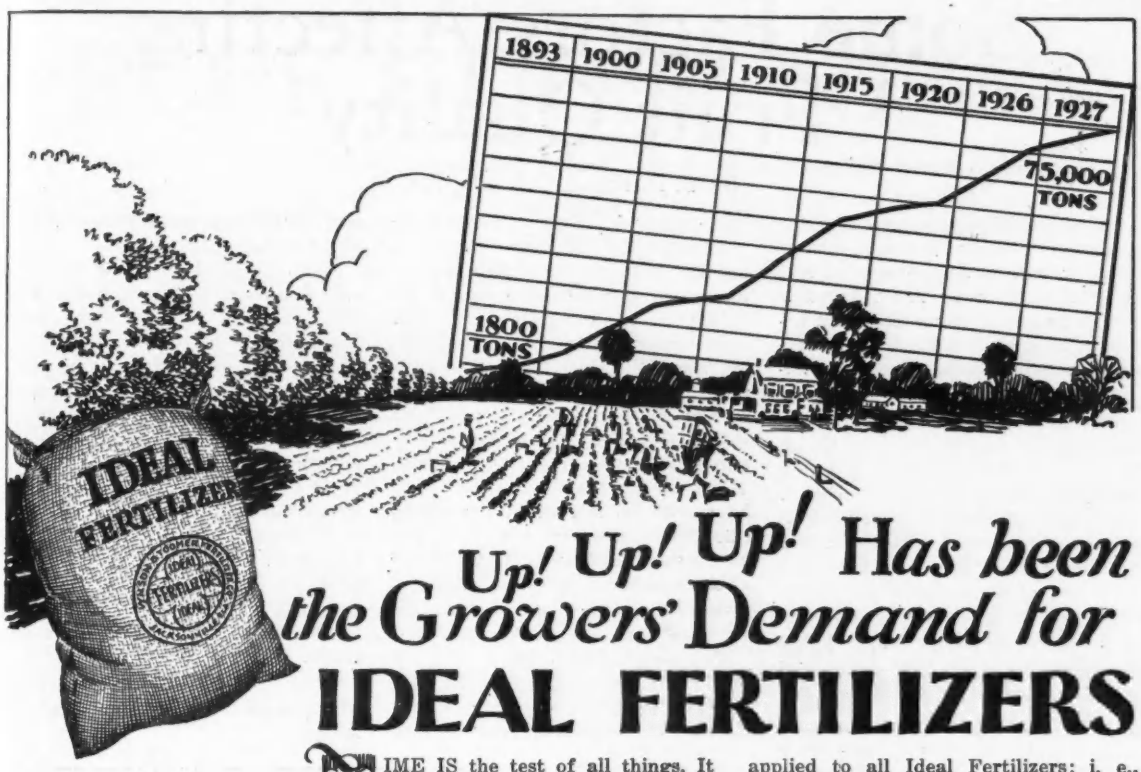
VOLCK
The Scientific Insecticide



Up! Up! Up! Has been the Growers' Demand for IDEAL FERTILIZERS

TIME IS the test of all things. It is the keynote of public confidence, for only good will survive in the long run. But to say Ideal Fertilizers have survived is putting it mildly, They have done more than that—they have grown by leaps and bounds.

Back of such increasing popularity there will always be found a reason and we attribute it to hundreds of enthusiastic Florida growers—whose soils have been enriched, whose crops have been increased and whose profits have steadily mounted from the consistent use of Ideal Fertilizers. In short, Ideal Fertilizers have "made good" for Florida growers—they have stood the test of time.

This record has been attained through a careful adherence to basic principles applied to all Ideal Fertilizers: i. e., they must be "made right" in order to "make good" and they must be carefully processed and cured to insure the full benefit of every pound of plant food they contain. Each sack of Ideal Fertilizer is tested for this exactness in a modern laboratory and manufactured in a completely equipped plant operated by experts of long experience.

Like the preceding thirty-five years of Wilson & Toomer Fertilizer Company's existence, 1928 promises to be another big year for Ideal Fertilizers. Give our field organization an opportunity to consider your problems and make specific recommendations that will suit your requirements—the kinds and amounts of Ideal Fertilizer to use, suggestions with reference to spraying and other general care. You can rely upon the service we offer through our field representatives, and for it there is no charge.

A Valuable Booklet

FREE

Here is a book you can't buy—yet it is free for the asking. It covers Summer Problems in the Citrus Grove and is from the pen of Bayard F. Floyd Florida's leading authority on citrus culture.

Write for your copy Today!

IDEAL Fertilizers

MANUFACTURED EXCLUSIVELY BY

Wilson & Toomer Fertilizer Company

Jacksonville Florida

"Please Say You saw It In The Citrus Industry."

Some Factors Affecting Fruit Quality

By C. D. Kime, Orlando, Fla.

It is very difficult to make any discussion of fruit quality simple enough so it can leave a definite sum of real information in one's mind. There is always danger of any information becoming confused because of its necessary relationship to other surrounding conditions.

The difficulty seems to lie in attempting to isolate the specific information we need in working with a commercial grove. What we need is commercially practicable results after being divested of all theories and repeatedly tried out in actual field work by growers themselves.

Nearly two-thirds of the grove expense occurs in buying and applying fertilizer. We must make better and more economical use of our fertilizer materials.

We will assume that we have been requested as individuals to carry a bearing grove through a full crop season and make for it all of the fertilizer recommendations. How will we do this? What does the grove need?

It has been possible for me during the past several years to "follow through" the fertilizing program of a number of groves and to actually "grove test", if you will permit the use of the term, under commercial production conditions the amount of information necessary to make a reasonably safe recommendation. It is really a serious offense against a grove and its owner to make an insufficient or faulty recommendation or to over-estimate. The latter is often dangerous. Therefore it is doubly pleasing when we find that our recommendations work out remarkably well through a series of years.

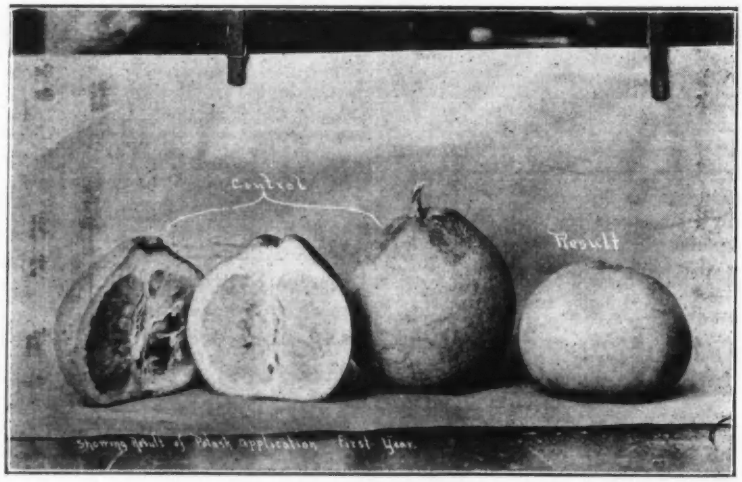
ESTIMATING CONDITIONS:

Ten months to over a year is needed by the trees in maturing a crop of fruit and in the meantime a foundation for a new crop is laid and building for it actually started. If we bear this in mind on entering our grove we will take a yearly view of our fertilizing problem and look at it from the yearly angle instead of only the immediate application. Such a view permits of a yearly balance of the fertilizer formula and aids in "working in" what may otherwise seem rather drastic corrective or balancing materials. Information regarding the past year's performance of the grove and the treatment it received is exceedingly helpful. We must know approximately at least the amount of the last fertilizer application and if the weather was dry or wet on the average. Armed with this information we are better prepared for a walk over the property. When we start out we must surely have with us a card of convenient size to jot down what we see, just as we see it and in about the order of their importance. Two whole crops at least depend on our decisions and we must eliminate guesswork.

The most striking thing we see is color. Our ideal tree is a good dark green color, in its mature leaves no yellow can be present. Just as soon as available ammonia becomes scarce, we begin to find shades of green showing a yellowish tinge. It may be light and scarcely noticeable but it is there nevertheless. If there is any yellow in the green we must grade off a bit in our record depending on how strong it shows up. This is the most important single factor and should be recorded every time a trip is made into the grove, distinguishing most carefully between the starvation color and that entirely different appearance caused from overbalancing with available ammonia first, or injury from red spider or other spider mites second.

Next we need to know the kind and denseness of the foliage. Thin foliaged trees will not bear much fruit. Small leaves or leaves too large—i. e. "small offs or large offs", are undesirable. Then the length of the last flush of growth indicates the immediate future possibility of growth and even fruit quality. The (internodes) distance between leaves should certainly be rather short or as in some blood oranges and occasionally in certain pineapples it can have a rosette appearance. Each variety can be lined up in one's mind in this respect and graded on our record card for that variety.

After going through the grove we will assume we find about the following:



This fruit shows result of Potash application secured in 1926 and made in 1925. Rate 15 lbs. per tree straight Sulphate of Potash 48% K2O.

SCORE CARD

Color:—A-1

Foliage:—Good size, short, well formed, dense.

Fruit:—Smooth, good quality, Flat. i. e. proper shape.

Crop:—Light 1927.

Insects:—White Fly present. Not bad. Purple Scale: light. Florida Red: none seen. Rust-mites: very few. Melanose: pin-point on leaves. Light.

Remarks:—Trees about eight box capacity. Generally good condition and clean. Need some pruning. Cul-

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BLUE GOOSE NEWS

Monthly News of American Fruit Growers Inc. *Edited by The Growers Service Department*

VOLUME 2.—No. 6 ORLANDO, FLORIDA, MAY 1, 1928 PAGE 1

GROWERS COMPLIMENT ACCOUNTING SYSTEM

Recently a number of compliments have come to the Orlando offices of the American Fruit Growers Inc. on the speediness and accuracy of the method employed in accounting, and in remitting to the growers for their fruit.

There has been no change in the accounting system used here nor in the method of making remittances. These compliments probably are in good part due to experiences which these same growers may have had elsewhere. The system in use here is the same as has been used continuously since the Orlando offices were opened.

By it each grower receives directly from the main offices a full and detailed accounting for each sale, together with checks in remittance therefor, immediately following the receipt here of the returns from the sale of his fruit in the markets.

When an f. o. b. sale is made, and a very large proportion of the business of this organization is composed of f. o. b. sales, a draft is drawn in the Orlando offices and is immediately forwarded to the point of sale through an Orlando bank. Immediately the returns on such drafts are received in Orlando, or immediately following receipt here of the cash returns on auction sales, a full and detailed accounting is made which together with check for the returns is mailed at once direct to the individual grower.

The details given in the accounting meet with the favor of the growers no less than does the promptness and accuracy with which all such transactions are handled.

A further feature which is strongly approved by all growers is not only the willingness but the cordiality with which the Orlando offices deal directly with all growers who have business to transact with the organization. It is not necessary for grow-

Continued on page 2

EXPRESS IRRITATION AT I. C. COMMISSION

Representative Brand, of Georgia, has published in the Congressional Record a letter from E. H. Callaway, an attorney of Augusta, Ga., in which the latter said it seemed to him that the Interstate Commerce Commission "ought to be wiped out."

"Mr. Callaway," said Representative Brand, "is not only one of the outstanding men and one of the ablest lawyers in the state of Georgia, and an ex-judge of the superior courts of the Augusta circuit, but he is a dirt farmer, being one of the largest planters in the southeastern section of the state."

Mr. Brand said he had received a letter from the Boston University School of Education stating that it was making a survey to determine the ten most pressing national problems in politics, economics, history and civics, and that in answering that letter he had taken the position that the agricultural problem was the first and most pressing national problem among the ten called for, and in that connection he suggested that freight rates on the necessaries of life should be reduced.

Mr. Callaway wrote his letter to Mr. Brand as the result of the views expressed by the latter. He said he believed "the overwhelming increases in freight rates since the passage of the Esch-Cummins bill have had more to do with the destruction of values in the agricultural sections of the country than any other single fact, even more than the large increase in the tariff by the Republican party. But it is the result of my observations that the masses of the people do not comprehend that fact and will not comprehend it unless some accurate detailed statement of facts is furnished to them."

Mr. Callaway then entered into a detailed discussion of freight rates, the Pullman surcharge and the "enormous increase in the value of rail-

Continued on page 2

WIDE SPREAD IN EARLY AND LATE GRAPEFRUIT

The outstanding feature of the Florida citrus markets as this is written is the wide difference in the demand, and the prices which receivers are willing to pay, for early and for late bloom grapefruit. There is literally not enough Marsh Seedless or other early bloom grapefruit to supply the demands of the trade, while late bloom grapefruit has been, and continues, draggy as this is written.

As a result practically all of the available supplies of early bloom grapefruit have been arriving in a few larger markets which have shown a willingness to pay the price, and late bloom grapefruit has been going to lesser markets where meeting with only very moderate demand from the consuming public there, the effect has been to still further widen the spread between early and late fruit.

Consumers in the larger centers have shown a willingness to pay even the very high retail prices for early bloom grapefruit, and have kept the markets well cleaned of such supplies as have been available. Consumers in those markets which have been supplied with late bloom grapefruit, on the other hand, are not responsive even to the relatively low prices at which it is offered. Failure of consumers to take these supplies off the hands of the trade has resulted in a draggy demand in consequence.

After the first week in this month the eating quality of late bloom grapefruit should show material improvement; but the tendency of the fruit to show "sheep nose" characteristics may in part offset that advantage. It would seem that the demand for late bloom grapefruit should soon be due to increase considerably, though the arrival of strawberries and some deciduous fruits into the markets may prevent any very marked upturn in late bloom grapefruit prices as the de-

Continued on page 3

Adv.

BLUE GOOSE NEWS

OFFICIAL publication of the American Fruit Growers Inc., Growers Service Department, published the first of each month in the interest of the citrus growers of the state of Florida.

EDITORIAL ROOMS
502 Yowell-Drew Building
ORLANDO, FLORIDA

MAKING OR LOSING

The hue and cry which preceded the activity of the Citrus Committee of the Florida State Chamber of Commerce gave many persons outside the citrus industry the impression that growing oranges and grapefruit in Florida was a losing business.

One notable instance of that impression was reflected in an article in the January issue of The Elks Magazine, in which the writer stated outright that growing oranges in Florida was so unprofitable it was generally conceded that the only thing to do was to chop down the orange trees. Ridiculous as it may seem, there were many others whose impressions were somewhat similar.

Subsequent happenings have just about dissipated the erroneous beliefs created in many minds by propaganda evidently directed toward producing a condition of panic and paralyzing the judgment of both growers and business men. It is now generally accepted that while some growers have been losing money more growers have been making money, and some of the latter have been realizing most satisfactory returns upon their investments and efforts.

Apropos of that situation a recent economic study of potato growing in Florida by the Experiment Station at Gainesville is interesting. Particularly interesting is that portion which deals with those who have come into the business of potato growing in Florida from occupations other than connected with farming. These constitute 45.3 of the potato growers in the growing districts. Right here we might pause to remark that perhaps eighty per cent or more of the citrus growers of Florida took up citrus growing without previous experience of value to such undertakings.

Of those not previously engaged in farming we find among the potato growers that 54.7 have been conducting their potato growing at a loss. The figures given in this study evidently have been accumulated painstakingly, and undoubtedly are accurate.

Yet we do not recall having seen a single newspaper headline, nor an editorial, telling about the "chaotic conditions" of the potato growing industry of Florida.

Adv.

GROWERS COMPLIMENT ACCOUNTING SYSTEM

Continued from page 1

ers to go through any intemediary, but they are at all times welcome to drop into the offices in Orlando and discuss details of their affairs with the organization.

All transactions are permanently recorded here, and are in such accessible form that within a very few moments any grower who desires may have before him not only the book records of the sales of his fruit but may personally inspect all telegrams or letters which have passed concerning any fruit in which he may be interested, or the original papers, inspect documents or anything else relating to his shipments. This is gladly done in every instance, for every member of this organization takes pride in the methods followed and is pleased to demonstrate to any grower how open and above board is every transaction.

Every grower at any time may have full access to all original documents bearing upon any transactions in which he is interested. Not only so, but if not convenient for him to visit Orlando, he may appoint in writing any friend of his who may be coming in this direction, and the same courtesy will be extended to him to review the original documents in question. Not only so, but the accessibility of such records makes it possible to place them all quickly before a visitor for inspection, and does not involve any loss of time. The only reservation which is made is that one grower may not obtain the records of another's transactions without the latter's expressed consent.

This policy of accounting in detail and of remitting promptly direct to the individual growers has had much to do with the success of the operations of the American Fruit Growers Inc., and in no small part accounts for the very rapid growth of this business in Florida within the period of a few brief years.

EXPRESS IRRITATION AT I. C. COMMISSION

Continued from page 1

road stocks." In part he said.

The railroads are permitted to charge all they want to charge on any kind of shipment, for any distance, and my information from local people is to the effect that complaints to the Interstate Commerce Commission have no effect, and even where they are investigated it takes three or four years to get a ruling, and then the ruling is made in such a way as to put heavier burdens on the people. The result of all this is that they are not merely destroying the business, but are starving to death every conceivable kind of enterprise here, whether of manufacture or agriculture, and are asking for change of rates and higher commodity rates, and, judging by the experiences of the past, the Interstate Commerce Commission will give it to them.

Of course, you are familiar with the surcharge on Pullman fares. Every time I pay a Pullman charge for Pullman service I feel like I am tipping the railroad because I pay my railroad fare at .036 a mile. I then pay my full Pullman charge for its service and have to tip the railroad company, or the millionaire owners of the railroad companies, half the amount of the Pullman fare for no service. But I suppose the big millionaires who own the railroads need this tipping just as the porters or the waiters on the dining-cars need it, but I sometimes cannot see how they can take the money . . . .

It seems to me that the present Interstate Commerce Commission ought to be wiped out, and probably the Esch-Cummins law ought to be wiped out, and that the Commission should be divided in power, and that there should be a branch of the Commission located in the Southeast, another branch in the Northeast, another branch in the central part of the country, and other branches in

the various divisions of the West beyond the Mississippi River, and that these commissions ought to be put in close touch with the people and handle railroad and freight questions promptly, fully and intelligently, and that the ruling spirit ought to be to relieve the people from the oppression of those gambling, speculating millionaires or malefactors of great wealth who are using the government and the government agencies to plunder the country and gradually destroy it. You can see from this letter that I feel very strongly on this subject. I am sending a copy of this letter to Senator Harris. I don't know whether the Democrats in Congress really appreciate all this, or whether they really have the definite information about this mixed-up matter of freight rates, or whether there is something that they are afraid of in touching the railroad question. Everybody down here, even the railroad employes, know about it; but when you mention it they say, "Well, what are you going to do about it?" Of course, Mr. Coolidge names the members of the Interstate Commerce Commission, and, of course, the Interstate Commerce Commission is serving its masters; but if the Democrats hope to do anythnig to correct this they must get up the statistics and facts and the numerous inconsistent rates, and they must put it accurately before the public in a manner in which the public can understand it. The propaganda that the railroads are putting out is nothing but bribery to quiet the newspapers.

It may be that you can get in touch with somebody up there who can get up this information and get it before the public in a manner in which they can understand it. If so, your constituents in Georgia will bless you.

Representative O'Connor, of Louisiana, in extension of remarks, "took a whack" at the Commission in attacking centralization of power in Washington.

"Feared and hated at its birth by the magnates," he said. "It has grown up into such a magnified state that it is questionable whether the railroads would not use their undoubted influence throughout the country to preserve the Interstate Commerce Commission were it assailed . . . While the Interstate Commerce Commission has been growing daily and gathering tremendous strength and power, the state commissions . . . have been dwindling in power and are rapidly reaching the vanishing point in influence as rate-making bodies . . . A revolt is slowly growing up against the rule of America from Washington . . We will either return their original power to the state commissions or we will take that step that will obliterate them."

Mr. O'Connor included in his remarks a letter from Francis Williams chairman of the Louisiana public service commission, stating that, unless section 13 of the insterstate commerce act were repealed or modified substantially, "state regulation of rates on traffic within the states will slowly but surely be annihilated." In part, Chairman Williams said:

There are several bills now pending in the United States Senate and House of Representatives having for their purpose the more specific definition of federal and state rights in this very difficult and most important question of state rate making by the states, and we are anxious that Louisiana's representatives shall be on guard for the protection and preservation of this state's right to regulate its own intrastate affairs.

The list of bills pending is too great to include in this letter, but it can be obtained by your secretary from Hon. John E. Benton, general solicitor of the National Association of State Railroad Commissioners, Otis Building, Washington, D. C.

As these federal encroachment on state freight rates have cost Louisiana and New Orleans millions of dollars in reduced business in the past, I therefore feel it to be my duty to call your attention to the remedial legislation now pending in Congress and to ask for it your deepest study and consideration and active support.

WIDE SPREAD IN EARLY AND LATE GRAPEFRUIT

Continued from page 1

mand increases.

Valencias from Florida have the call of the markets; and prices paid for them have been excellent. Notwithstanding the warnings of Florida shippers, the trade seems to have been somewhat unprepared for the very rapidly diminishing Florida orange supply. Since the first of the month the daily demand has grealy exceeded the total available supplies, and prices have held very strong accordingly. The future outlook for Florida Valencias, for such few as remain at this writing, is excellent, and only may be modified by increasing arrivals in the East of California Valencias, shimpents of which may be stimulated by the market situation.

With total citrus shipments from Florida for the season very close to the mark of thirty-five thousand carloads on May 1, and with more yet to go, it is apparent that the pessimistic predictions of some time ago have failed to realization. It has been a short crop, but not nearly so short as some anticipated. One fact is outstanding, the crop has obtained a large amount of very real money. Lacking actual statistical figures it may be of doubtful propriety to guess, but it does seem quite possible that the statement heard in many quarters to the effect that this season's prices set a new high record may be in accordance with the true facts.

NINE PRUNES THEY WANT NINE PRUNES THEY GET

Price fluctuations, bumper crops or crop failures in this country mean nothing to the prune in London. The prune there has been stabilized—nine prunes to an order.

The price may rise or fall in the Pacific Northwest, but the nine prunes go on forever, it is said, in London's largest chain of restaurants, claiming to serve 10,000,000 meals weekly. Nine prunes were decided upon as an order by the head of the rationing department years and years ago, and it's nine prunes to the dish today in all of the 261 eating places.

The cost of the dish of nine prunes is three pence (about six cents) per dish, or three prunes for a penny as always.—Better Fruit.

CITRUS FRUIT EXPORTS INCREASE DURING 1927

Increased exports of oranges and grapefruit account for most of the increase of seven million dollars in the $60,000,000 fresh fruit business with foreign countries in 1927, according to Daniel J. Moriarty, foodstuffs division, United States department of commerce.

The feature of the 1927 exports of oranges was the fact that Great Britain more than doubled her purchases of American oranges, taking 600,000 boxes as against 234,000 in 1926. Great Britain and Canada were the principal foreign markets.

Adv.

UNIFORMLY

THE BEST

Ask A Housewife

Ask any house wife anywhere what are the most effectively advertised and merchandised lines which come into her kitchen. She will tell you Heinz' 57, Del Monte canned goods and Blue Goose fresh fruits and vegetables.

Remember that the other two have been years before the public. The Blue Goose reputation has been made in a brief eight years. A more readily visualized and more easily remembered trademark has put Blue Goose products quickly to the fore.

Details of the advertising of these products are as different as are the products themselves; but the principle involved is the same. There is a complete line of non-competitive products some of which are seasonable and in demand by consumers every day in the year. Quality of each individual item in the line is carefully maintained, and each gains from the prestige of the entire line.

The fact that some item is up for attention at all times keeps the Blue Goose trademark fresh in the minds of consumers fifty-two weeks in the year. It makes advertising results easy and economical of attainment.

And every grower whose products go to market under the Blue Goose trademark profits personally by reason of the already existing demand which greets his goods upon their arrival at any place in the United States, in Canada, and abroad.

American Fruit Growers Inc.

Orlando, Florida

DEPENDABLE AFG QUALITY

Adv.

SOME FACTORS AFFECTING CITRUS QUALITY

Continued from page 18

tivation good. No spray work necessary. Had fall application of 3-6-12 @ 20 lbs. Present condition indicates good bloom. Recommend 4-8-6 @ 18 lbs. per tree.

We won't use any special sequence in statement as the information is short and can be read over quickly. So the most important points can be set down as we observe them, covering scale insects and diseases, general grove conditions and always concluding with recommendations made on the spot while in the grove. These can be changed later if it is found that over-balancing on a part of the formula might occur.

It is assumed in our discussion that we are already familiar with the property. If not on the first visit to a new grove we would add information as to variety, age of grove, soil type and condition, exposure, moisture conditions, previous crops and their quality when crop information is available, which it usually is not.

If a check is made of a spray job this too is received on a similar card and filed for future reference. After a very few such written visits one certainly acquires a "feel for the grove in question and one is then in a position of knowing what to expect of the trees quite as though they were individuals possessed with human personalities.

Having acquired our information we must make a recommendation. In this case it is easy, as it is the spring of the year and there are no unusual conditions to combat and furthermore the grove had a light crop last year. Whatever happens the May and Fall application can be used to correct it or carry it on further as may be necessary. Therefore the recommendation of 4-8-6 may be considered in order for spring.

In May and the Fall we will have a more serious problem in that the crop must be taken care of, the trees kept in good condition and a bloom assured insofar as this is possible for the next season.

APPLICATION:

Here we come to the most difficult part of the subject. It is difficult because of the perfectly hugh amount of soil variation possible from section to section of a given property and because of even a tree to tree variation. We will find a variational effect within a variety and always a difference in behavior between varieties themselves, first as a variety and second as a root-stock effect, i. e. sour, lemon, sweet and etc.

If we can learn the effects of our various materials and then apply them to our citrus varieties in proportion to the ability of the varieties to use them, we are then in a position to "step-up" our rate of operation and largely eliminate the so-called off-year which shows up in all groves at regular intervals of from one to three years.

In response to a constant and pressing need there has been added to our present list of chemical ammonias a number of new materials and out of this list we find several giving great promise of being suitable and desirable additions to those already in use.

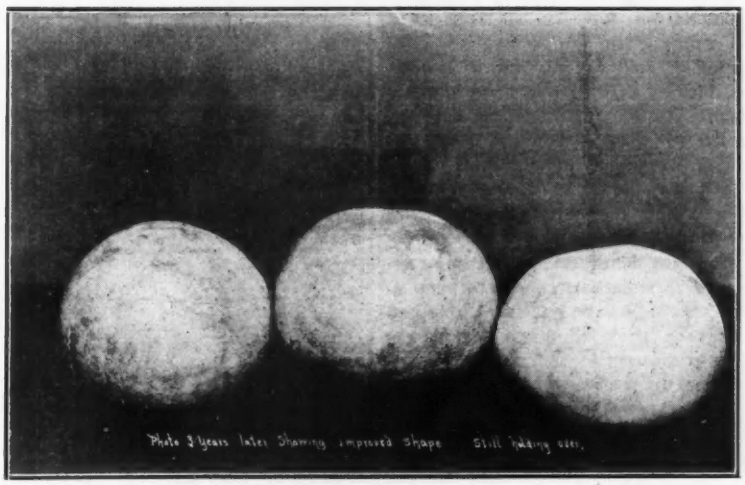
A rather wide and in some cases sad, experience has led me to conclude that quality fruit can be more quickly and easily attained through the chemical plant foods, especially, than through the organics. It seems absolutely necessary that a citrus tree have a humus and a bacterial-supporting soil, but it does not seem necessary for us to buy this humus as high-priced fertilizer. Rather, we can grow it as a cover crop or add a separate manure application using cheaper sources that in the end prove even more suitable.

Having applied our spring fertilizer we are now approaching our mid-season or May application. The grove has bloomed well and set a good crop of fruit.

What effect may we expect from our formula that we must recommend? We don't want too much growth or we will find that there is a distinctly "vegetative" condition of citrus which we all recognize so easily in young trees not yet in bearing, but which we cannot recognize so easily when carried over into bearing groves. Coarse, succulent growth, big leaves, coarse fruit of poor quality or no fruit at all, are typical of such conditions. On the other hand we also have seen trees in ideal shape, full of fruit of good texture and here we can surely recognize a "fruiting stage" or good bearing conditions.

Now it is usually necessary to put a young grove through a transition period from the first condition to the second and in order to do this it is common practice to increase the potash and lower the ammonia.

This, I believe, will clearly illustrate the point that good quality fruit and a bearing condition lies on the potash side of our formula rather than with the ammonia side, though ammonia is of course necessary to the process. We often slip up rather seriously in this transition process in young groves and also in keeping our older groves in bearing condition, for potash seems to be necessary as a corrective for rough, off-quality fruit.



This grape-fruit is from 3rd. grade bin and indicates improvement in shape.

We can conclude from these easily observable effects that potash IS necessary as a corrective to coarse, rough fruit and at the same time it will cause a change in the too vegetative conditions found in young groves and frequently found in old bearing properties.

The first conclusion can be demonstrated and has been demonstrated many times and I am offering as a convincing illustration these pictures and the grove record on the chart, as a demonstration of the second conclusion.

This is a clear case of "quality" improvement, substantiated by both packing house and ownership rec-

ords.

Briefly, the transition from vegetative to quality fruiting was accomplished by the application of 15 lbs. per tree of sulphate of potash. This in the place of only one regular application. The trees are on about 22 ft. centers and are thickly grown, are over 20 years of age and on hammock type soil. They are also budded on lemon stock.

During the years I followed the fertilizing, it bore well as these grove-yields show. Even on shy crop years, it still throws a good commercial fruit. A check up brings out the information that it has had somewhat higher potash since the change than before, but entirely too light an application in total pounds per tree.

AMOUNTS:

There seems to be a direct danger of exceeding our indefinite point of possible tolerance in the tree itself in running up our applications. For example, we may imagine such a relationship as cold effect on the human. We have, stimulated activity, followed with a slowing down and coma, resulting in death. We can ward this result off by more clothing if they are available, but with continued extreme cold even clothing would not avail and we would be reduced to a fierce struggle to keep alive. So it is with our trees. We can carry on these high-pressure activities provided we remain within the proper degree of tolerance and we can go further with our "stepped-up" applications if we safe-guard with the necessary balances and stay within the limits of effectiveness of the materials used. In other words, all plant foods of any kind are harmful in their effect on quality fruit when used in too large amounts or left seriously un-balanced.

As an example of what we may expect from lack of balance, even where large amounts of the three materials are used (the ammonia taken from organic sources in this instance) I offer these fruits as samples from heavily pushed trees carrying a super-abundance of phosphoric acid, organic ammonia and eight percent potash. In contrast here are fruits from an adjacent block using all chemical sources with potash at the same rate of eight percent. You will note that the larger fruits are coarse and over-grown. They have a good juice content but otherwise are rough and undesirable, while the smaller fruits are of fairly smooth texture, show good carrying quality and a further examination would show a higher sugar content even at this late date (April).

In a given soil where only fairly uniform, we seem to get the same general result as in uniform soils, but we can only build up specific differences on those important slighter tree variations occuring as a result of lack of soil uniformity through experience.

Thus we would expect one set of results on high land of the Norfolk type and we would expect similar general results on hammock lands, but altered by the soil effect to a different plane. Where only experience can decide.

MAY:

Through these easily observable and actually demonstrable effects, we can approach our May application with some degree of confidence.

We have a large crop to support; our trees are in good condition; we want a crop next year. As aids to this end we have: some potash residue from the previous Fall and from the Spring application; ammonia still available; some phosphoric still available; the rainy season of summer beginning in June to aid in making all elements more available.

Faced with these conditions what can be better than some good organic carrying a high potash content in proportion to its other two elements such as goat-manure or tobacco stems. These will aid in building a cover crop, in incraesing bacterial activity among the soil bacteria already present. Castor-pomace would need heavy balancing on the potash end of its formula to counteract the ammonia effect or it too, would be suitable for our May fertilizing. It can be effectively used even so, where

Continued on page 30

Fruit Shipments 1920 — 1928 Illustrating Improvement in Quality in Grapefruit.

	No. Boxes 1st Grade	No. Boxes 2nd Grade	No. Boxes 3rd Grade	No. Boxes Cull	Average 1, 2 & 3	Packing house Return
1920	0	348	527	119	$1.00	1937.35 Sale 1061.11 Cost 876.32 Net
1921	0	436	312	127	.43	936.61 Total 612.54 Cost 324.09 Net
1922	134	405	110	194	.54	1086.10 Total 734.09 Cost 352.01 Net
1923	238	471	208	223	.96	1959.99 Total 1074.33 Cost 885.66 Net
1924	20	276	113	302	.95	660.66 Total 621.71 Cost 38.95 Net
1925		227	260	10	Sold June 6th. .20	557.21 Total 458.90 Cost 98.51 Net
1926	180	288	86		1.31	802.08 Total 75.61 Cost 726.47 Net
1927	276	364			.85	627.00 Total 78.12 Cost 548.88 Net
1928	31	81	(94 June bloom) (Net $1.10)		2.12	252.75 Total 15.39 Cost 237.36 Net

The grape-fruit block was 2 acres in extent up to 1927 and only 1½ acres in 1928. The improvement in quality occurred during 1926-1927 season and was due to applying 15 lbs. per tree of 48% Sulpuhate of Potash.

CHACO FERTILIZERS
ARE GOOD FERTILIZERS

PACKED IN MACHINE-CLOSED
100 LB. BAGS
A ONE MAN PACKAGE

FOR CITRUS AND
TRUCK CROPS

CHASE & CO.,
SANFORD, FLA.

FERTILIZER MANUFACTURERS
GROWERS SUPPLIES

SUNSET CITRUS WRAPS

QUALITY Sunset Citrus Wraps are made from the best grade of Mitscherlich Pulp that can be manufactured. A strong, pliable, good twisting paper is only obtainable by using a pulp of this kind. We manufacture our own paper and for this reason our paper is always uniform.

PRINTING Installation of new modern printing equipment will assure you of superior printing.

SERVICE We can deliver in Florida quickly. Service from New York to Jacksonville is three days. Orders accepted only if we can fulfill delivery agreements.

PRODUCTION Our equipment covers complete range of Citrus sizes. Ample capacity to care for the largest users and necessary flexibility to assure satisfaction and service to the smaller user.

FRED C. STRYPE

140 Lafayette St.,, New York City

Sole Distributors of

Citrus Wraps for Continental Paper & Bag Mills Corp.

COUPON

Fred C. Strype,
140 Lafayette St., New York City.

Dear Sir:- I am interested in prices and samples of your Citrus Paper. I usually purchase my supplies_____

Name _____ RFD or St. No. _____ Post Office _____ State _____

"Please Say You Saw It In The Citrus Industry"

PROTECTING FLORIDA'S AGRICULTURE

Continued from page 6

Not all of our dangers are due to pests still in foreign countries. When the Japanese beetle—now infesting large areas in New Jersey and Pennsylvania—establishing itself in Florida it will cause more consternation than citrus canker ever did. When the European corn borer—which has already occupied the territory from Massachusetts to Indiana—and the pink bollworm of cotton—which has recently been found over an area of 500,000 acres in Texas—establish themselves in Florida it is not impossible that our corn and cotton crops will repeat the history of the pear industry of years ago.

Ten years ago, practically all shipments of nursery stock, plants of all kinds and fruits and vegetables came into Florida from other states by freight or express. It was possible for the Board's inspectors to examine practically all shipments and intercept dangerous materials. Today the amount of such material coming into Florida by parcel post and by private and commercial motor vehicles is probably much greater than the amount coming by rail.

While the Plant Board can secure, from federal sources, the privilege of inspecting certain classes of mail matter, it has not been provided with men or for the work.

Automobiles and trucks cannot be stopped at the state line or on the highways and their contents investigated unless the Board's inspectors are provided with police authority.

The development of the magnificent road system in Florida and adjacent states, coupled with the great increase in motor vehicles, has introduced into the situation the most terribly efficient means of pest distribution the world has ever seen. Already the airplane is begininng to contribute its part to a still more rapid spread of pests.

Unless the Florida growers and those interested in protection of their fields and groves take cognizance of this situation and take steps whereby it may be dealt with, the future resultant losses will be staggering, if not disastrous. Even increased expenditures for insecticides, spraying and fumigation in dealing with new and more pests will not meet the situation, for it is to be remembered that there are many pests and diseases for which science has as yet found no paliative or control measure and sometimes an industry expires before frantically working scientists can find a way to save it.

It is not a job for tomorrow, for tomorrow may be too late.

J. Schnarr & Co. Sustain Fire Loss

Fire on the night of May 1, partially destroyed the plant of J. Schnarr & Co., pioneer insecticide manufacturers at Orlando.

First published reports in the daily press indicated that the entire plant had been destroyed, but later authentic reports are to the effect that only the damage was to the sulphur unit of the plant which was destroyed. The main production units were undamaged, and the firm announces that the needs of its patrons will be cared for as usual.

Steps will be taken at once to rebuild the sulphur unit and also to enlarge and greatly improve the other units of the plant to better serve the growing needs of the company's patrons.

The loss sustained by the destruction of the sulphur plant is estimated at $25,000, but while this unit is being replaced the needs of patrons will be met without interruption.

The Citrus Industry is glad to note that the loss sustained by the company is less than was first reported.

Announcement is also make by J. Schnarr & Company of the appointment of Mr. L. R. Frank of Clearwater as the company's representative on the Florida West Coast. Mr. Frank is a graduate horticulturist of many years experience and has been connected with some of the larger fertilizer and insecticide houses. As West Coast representative of J. Schnarr & Company he will be prepared to render up-to-date service to the growers in his territory.

THE NURSERY INSPECTION SITUATION

Continued from page 16

to secure inspection certificate tags, if the conditions prevailing in the nursery merited such action. Each certificate tag is numbered and the nurseryman is required, under the Plant Act of 1927, to make a record of each sale and transmit to the Nursery Inspector at Gainesville a report showing the name and address of the nurseryman making the sale, the name and address of the purchaser, date, number of the certificate tag attached to the shipment and kind and quantity of the nursery stock. Each report from the nurseryman is filed in the office of the Nursery Inspector as a part of our permanent record.

One Certain Way . . .

There is one certain way to keep enhancing the value of your property as the years go by . . . .

Plant Shrubbery, Palms, Fruit Trees and Vines and let each year add value and beauty to your home grounds.

"Well begun is half done". Decide to start now! Just drop us a line or come to see us at Oneco. Our 45 years experience with Florida plant materials is yours for the asking.

Reasoner Brothers'

ROYAL PALM NURSERIES

Oneco, Florida

Ask for free illustrated catalog.

The Sure Spray for Aphis

DERRISOL "IT KILLS APHIDS"

No Odor
Non Poisonous
Pleasant to Use
Does Not Require Soap
Mixes with Other Sprays
Can be used with Hard or Soft Water

Your Dealer Has DERRISOL

FLORIDA DISTRIBUTORS
PENINSULAR CHEMICAL CO.
Orlando, Florida

TEXIDE

A petroleum base insecticide designed especially to meet the needs of the citrus grower.

TEXIDE is so mixed that from 92% to 98% of the active oil content adheres to the tree and is available for insect kill. In ordinary oil sprays only about one-half the oil content sticks to the tree. This is one of the reasons TEXIDE is worth more than other oil insecticides.

Correspondence is invited.

THE TEXAS COMPANY
Texaco Petroleum Products
District Office, Jacksonville, Florida

Texaco Agents located in citrus centers:

Orlando Haines City Lake Wales Avon Park Eustis Clermont Lakeland Tarpon Springs Tampa
Fort Pierce Bartow Leesburg Titusville DeLand Arcadia Fort Myers Kissimmee Cocoa Clearwater

IMPRESSIONS

By The Impressionist

The attendance upon the forty-first annual meeting of the Florida State Horticultural Society held at Winter Haven justified the policy followed for some time of holding every other meeting at some central and easily reached place. It was a large attendance which did justice to a program that contained many papers of interest to the growers, and numerous interesting discussions.

Walking down the street in Winter Haven with General A. H. Blanding, member of the Board of Control, and Dr. Wilmon Newell, head of the State Plant Board, we remarked the absence of the late Dr. O. F. Burger made us feel very badly. For years we have had a lot of fun concerning the size of those three gentlemen as compared with average humans, and ourself in particular. Our remark threw a tinge of sadness over the trio. Dr. Newell then told us how badly Dr. Burger's sudden death had thrown them out of gear at the Experiment Station, and how they were handicapped in trying to get things running smoothly and efficiently again.

Frank Stirling up from Davie, sporting his more recent title of Muckhound of the Everglades, and greeting a vast number of old friends among the growers. As the man who tied the can to canker, Frank Stirling will long hold prominent place in the minds of members of the Horticultural Society.

Dr. David Fairchild, the federal expert who has traveled from Thibet to Timbuctoo studying plants, dropped a remark in the course of his talk which impressed us as significant. He told of bananna lands in the Canary Islands, where they grow the real prize banannas, having a value of $15,000 per acre. We are often worried that our Florida wage rates make the production of some fruits costly as compared with those grown elsewhere. If, however, a quality product can justify land prices like this, with attendant overhead of interest on such amounts, seemingly we should not worry.

Tracing the consumption of avocadoes, Dr. Fairchild showed they were eaten most avidly by the least civilized and most benighted peoples. The inference apparently was to ship your avocadoes to those places where civilization is at a low level. We wonder if this will stimulate Dade County shipments to Chicago in the future.

A bunch of old boys in a hotel lobby in Winter Haven, telling each other how good they are at their advanced ages of sixty-five or seventy. Major W. S. McClelland of Eustis quietly remarks that until they have passed eighty years, as he has, they are not really qualified to talk. After the Major has been made to prove up concerning his own age, someone changes the subject.

At Winter Haven seated upon a hotel verandah we learn from the foreign agent of one of the large fruit shipping organizations, who has been on the job abroad for several years, that citrus shipments via New York are from four to five days faster and are materially cheaper than the more recently inaugurated cargo shipments direct from Jacksonville. We are surprised, and a bit disappointed, but the gentleman quoted figures to prove his statements. Our impression is that these contacts outside the meeting place often contribute much to one's education.

The Winter Haven Chamber of Commerce under the leadership of Jay Stull did its noblest most successfully to make the meeting a good one; but whether the chamber of commerce luncheon to the Society's officers and others, which saved Joe Lyons the professional luncheon buyer a lot of money, was their idea or Joe Lyons' idea we are not certain. It was an enjoyable event at any rate.

Here is our official report: If there is no more than the normal percentage of liars in the state this year, our candidacy for member of the State Railroad Commission looks quite favorable. The growers seem to have spread widely the idea of the desirability of having someone familiar with the big perishable shipping industries upon that commission; and it seems to take even in the non-perishable producing sections. Just now we are modestly engaged in trying to be simultaneously everywhere in the sixty-seven counties of the state, trying to do the impossible of seeing everyone everywhere. We will at least have the advantage of leading the batting order, coming first alphabetically in our group.

That mass meeting in Orlando called by the Committee of Fifty was a whale. We had contact with enough growers from all over the state to fill the space allotted to these impressions several times. Newspaper men present could not agree upon the approximate number present, so the manager of the Orlando auditorium was called into consultation. That resulted in the guess of between twenty-two hundred and twenty-three hundred.

Not to detract in the slightest from the credit due to Judge Allen Walker, Judge C. O. Andrews or any of the other untiring leaders of this movement, whose efforts deserve great praise, we feel that especial credit is due to John C. Morton for his extremely clear and lucid presentation of the aims and objects of the undertaking. Since that meeting we had contact with a nationally prominent attorney from outside the state who has no interest in citrus and who was present at the meeting only incidentally. He confirms our impression, being highly complimentary to Mr. Morton's effort. In fact he expressed amazement that anyone not a lawyer should have been capable of such a presentation.

Chas. P. Zazalli of Lakeland recently came in for published notice elsewhere because of a tree he possesses which bears the full fifty-seven varieties of citrus fruits. His final place in the Hall of Fame, however, will probably be predicated on the leading part he is taking in the Anderson-for-railroad-commissioner movement.

The manner in which the conflicting citrus shipping interests have buried the hatchet for the time being in order to support us is most gratifying, whether we win, lose or draw. It seems to argue for a basic solidity of the industry, regardless of frequent surface divisions. We have long tried to work for better feeling and better relations between the various citrus factors, and there are comforting signs of continuing progress in that direction.

As for the movement so conscientiously launched by the Committee of Fifty, it would seem to be upon the lap of the Gods. If the growers sign, it will naturally command the attention and the allegiance of all the principal and most of the smaller shippers. If the growers refuse to sign the contracts it will on the contrary fail wholly of its purpose. If we were the seventh son of a seventh

son and gifted with second sight we could today hardly predict the outcome. Sentiment and enthusiasm cannot be figured. It is signatures upon the dotted line prior to July 10 which alone will count.

CITRUS GROWING ON THE MUCK SOILS

Continued from page 15

quality of the fruit.

The depth of the muck varies from twelve inches to five feet, this underlaid with a sub-soil of sand and limestone apparently affords a splendid capilary action accounting for sufficient moisture for the roots of the trees, even at the present month with a deficient rainfall of approximately twenty-five inches one can note moisture in sufficient quantity within an inch or so of the surface and the waxy, green coloring of the foliage show that the trees have plenty of moisture.

We have found that sour-orange stock is preferred over all other root-stalks in these heavy soils and while grapefruit, tangerines and other varieties have been planted and grown satisfactory yet the principal varieties planted are late oranges.

A number of practical citrus men have visited these muck land groves, have investigated possibilities and have apparently become informed as to the conditions as they exist especially in connection with the production of mid-summer fruit, they seem to appreciate the economical cost of production of fruit of good quality for they are making plantings here themselves.

It seems that with the combination of a steady supply of plant food, a steady moisture supply and late varieties it is possible to have the harvesting period in the summer months rather than in the late fall, winter and early spring months for the first seldom leaves the groves before May and more often in June and frequently in July.

So it seems to me that here may after all be a thing developed that will benefit all for if an industry developes here in the glades it will mean that our marketing organizations may carry on throughout practically the whole year, handling mid-winter types in the north and central portion of the state and mid-summer types from the Everglades, placing fruit on the market at times that will not interfere competitively with either section and I hope and expect to see a new citrus section that will aid materially to develope these rich muck lands, an industry of no mean proportion.

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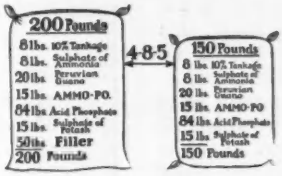
You bought a 200-pound sack containing 150 pounds of plant food and 50 pounds of filler.



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You buy a 150-pound sack containing 150 pounds of plant food only—no filler. You save the cost on freight, haulage and distribution of worthless matter.

Write for Our New Farm Record Book

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C. NASH REID, President

Jacksonville, Florida

PRICE REDUCED on "Black Leaf 40"

[In Tins]

Larger production and economies in factory processes now make it possible for us to furnish "Black Leaf 40" at decidedly lower prices. Growers should participate in these savings and we have revised our prices in tins, effective January 10, 1928, as follows:

10-pound tins - $11.85 each
(formerly $13.50)

2-pound tins - $3.25 each
(formerly $3.50)

"Black Leaf 40" the "Old Reliable" occupies a position of unrivaled leadership in the world's markets. Kindly place your order with your dealer.

Tobacco By-Products & Chemical Corporation
Incorporated
Louisville, Kentucky

"Black Leaf 40"
40% Nicotine

KILL APHIS "Black Leaf 40" DUST · SPRAY

SOME FACTORS AFFECTING CITRUS QUALITY

Continued from page 24

a distinct ammonia reaction is needed. Tonnage applied should be generous i. e., heavier than the usual mixed formula by several pounds per tree and with goat manure it can be doubled very effectively.

Another possibility for our May application lies in a number of variations of a mixed formula. These coupled with a distinct effort to increase the cover crop, give a satisfactory result, as many of us can testify from their continued use.

If we will bear in mind that the quality base for our fruit is laid while the fruit is growing and not afterwards, we can recognize the important part potash will play at this time and we will not reduce it to the innocuous amounts so often used, or over-balance it entirely with a large percentage of ammonia. It would be reasonable to assume that an eight percent potash with not over three percent ammonia, half organic, would give better results than a lower potash or a higher ammonia.

We can think back and find many groves that have come through to our Fall applicaitons on the basis of a 3-8-8 or a straight organic application in excellent condition, while on the other hand we can find many records of fruit lacking in smoothness and texture where the potash checks out as LOW in percentage or pounds of material applied.

With a normal rainy season, our hypothetical grove we are fertilizing may be expected to come through to Fall with an excellent crop of fruit of just under average size.

FALL

Practically the time is too far ahead for us to attempt to estimate what the grove will need in the Fall. We can feel some confidence that with our higher potash applied for the rainy season and with a higher potash applied in a generous tonnage in the Fall, we will have supplied one and probably the most vital element affecting present quality and future fruit bud formation for our next crop. This higher potash in the Fall is used by the tree through the assistance of sufficient ammonia which keeps our tree in our original dark green color, whatever that amount may be. If a check over the grove shows that we have missed the desired color, it can be quickly restored and should be restored by an immediate application of available ammonia.

CONCLUSION

My conclusions from these observations and from other experiences lead me to believe that a rather simple written statement of grove conditions made regularly is a most important step toward consistent bearing of quality fruit.

The most important element in aiding quality is potash, but that both ammonia and phosphoric are necessary aid in the process. We can materially "step-up" our applications and formulas in tonnage and percentage with very profitable results, but extreme care must be exercised in seeing that the ammonia and phosphoric are held in check with sufficient potash.

The ammonia effects are easily observed, the phosphoric effect is not. The ammonia effects are observable and appear quickly; the phosphoric effect is obscure and indefinite, but important never the less, while the potash effect seems to be a delayed action, though apparently no less plain because of its later appearance.

NOTICE

Due to an oversight, the name of J. J. Parish, Titusville, Florida was ommitted from the page advertisement of the Growers and Shippers League of Florida on page four of this issue. Mr. Parrish's name should have been listed under the head "Shipping Members."

ETHYLENE

Universally used by the citrus industry for coloring

Ripens, colors and blanches fruits and vegetables

Economical · Non-Toxic · Clean

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WATER INJURY TO CITRUS TREES IN FLORIDA

Continued from page 11

stalled a good pump of sufficient capacity to lower the water in the ditches to a suitable level within a 24-hour period. Trees that have been planted too deeply should be raised until the crown roots are level with the top of the ground.

After a drainage system is once installed, the grower should keep his ditches and canals cleaned out. Vegetation and silt will gradually fill them up and, if heavy rainfall occurs with the ditches so clogged, their efficiency will be greatly reduced. It is vastly easier to keep the ditches cleaned out during dry seasons than to open them up when they become filled with water.

Trees that have been but slightly or moderately injured by prolonged saturation of the soil, say to the extent of partial defoliation and the dying back of some of the branches, should be headed back well. Where trees are suddenly deprived of their tops, it is advisable to whitewash the trunks and stubs of the limbs to prevent the likelihood of scalding and killing the bark by sudden exposure to the sun of the parts accustomed to shade. Trees cut back in this way should not be fertilized for fruit production, like bearing trees, but should be given the fertilizer applied to young trees for stimulating growth and wood production. The recovery of such trees will depend largely upon the subsequent soil moisture conditions and method of handling of the tree. By reason of the superior water holding capacity of muck and other soils rich in organic matter, trees injured by excessive water on such soils invariably recover from water injury better than trees injured to a like degree on sandy soils.

It will not pay to spend time in treating trees that are badly injured by water. Even though the trunks and limbs may put out a growth of sprouts, this is no assurance that the trees will recover since such trees may have no appreciable amount of roots remaining alive and may merely be making a pretense of growing, solely by virtue of the reserve food materials stored up in the wood of the trunk and branches. It should always be remembered that the root systems of water-injured trees are always in far worse condition than the tops appear to be.

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OFFICES: 805 Citrus Exchange Bldg.

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"QUALITY FERTILIZER FOR QUALITY FRUIT"

June Plantings

For those sections of the state where June citrus plantings are indicated we offer for spot delivery a good selection of varieties, all thrifty, desirable stock. To others we recommend early reservations of Fall planting stock.

We can furnish excellent trees on any generally used rootstock, but those on other than sour orange roots are sold at substantial discounts below the prices at which the same quality of sour stock is sold.

Send today for our price list, and reserve early the trees you require for Fall planting. Our quarter of a century of successful experience in this location is yours to command.

Lake Nursery Co.

Capital $300,000

Oldest Sour Orange Nursery In Florida

Leesburg, Florida

Cancellation of Transcontinental Class and Commodity Rates

By J. Curtis Robinson, Secretary-Manager, Growers and Shippers League of Florida

Increases in rates on various commodities moving between Pacific Coast and Florida Peninsula points proposed to become effective September 2th, 1927, but which were suspended by the Interstate Commerce Commission, have been cancelled.

On April 18th, the Interstate Commerce Commission issued its decision in Investigation and Suspension Docket 2983, finding that the cerriers were not justified in cancelling class and commodity rates between Pacific Coast Territory and Intermountain Territory on the one hand, and points in the Peninsula of Florida on the other. The carriers proposed to cancel class and commodity rates which were established on August 31, 1918, during Federal control, and which have been in effect since that time, the only changes being the general increases and reductions ordered by the Commission. They proposed increases on rates on commodities moving between the Pacific Coast or Intermountain Territory and the Peninsula of Florida, which in some instances amounted to as much as 65%.

The Commission in its decision orders the proposed rates cancelled on or before May 24, 1928. This decision is made without prejudice to the establishment of rates for the future to and from the Peninsula of Florida, which will not be in excess of reasonable rates, and which will not exceed corresponding rates applying between Jacksonville and other northern Florida points and Pacific Coast and Intermountain Territory, by differences greater than are warranted by the additional distances involved and by the transportation conditions in the Peninsula of Florida.

The Commission found in its examination of the evidence presented before them in the hearings at Washington and Los Angeles, that the rates proposed by the carriers on fresh fruits and vegetables from western points to four principle destinations in Florida would be increased to approximately 150% of the present rates from points of origin to Atlantic Seaboard. The Western shippers who presented their testimony at Los Angeles pointed out the enormous increase in the production of fresh and dried fruits and vegetables and other commodities in the Intermountain Pacific District and showing that the traffic from the west to the Peninsula of Florida has developed remarkably within the past eight years. Their estimate of the increase in rates as presented to the Commission shows that the increase would amount to from 14% to 83%.

In the evidence presented to the Commission it was shown that cigars in small lots aggregating 895,431 pounds moved from Tampa to the Mountain Pacific District. The bulk of the traffic which have been affected by the proposed increases is the eastbound movement of fresh fruits, vegetables, dried fruits, beans and peas, canned goods, eggs, and wrapping paper. While the majority of the traffic originates in California, Oregon and Washington, there is also some movement from Idaho, Colorado, and Arizona. During the year ending Sept. 30, 1927, 1525 cars of perishables and 99 cars of canned and dried fruits, vegetables and fish moved from the Mountain Pacific District to Tampa. During the year prior to July 1st, 1927, 19,789 tons of all commodities moved in 1192 cars from California points on the Southern Pacific, Sante Fe, and Los Angeles and Salt Lake Railroads to points in the Peninsula of Florida. During the same period the Atlantic Coast Line delivered in the Florida Peninsula 817 cars which originated in the Mountain Pacific District.

The proposed increase was an at-

WHEN thinking of **genuine** Peruvian Guano, remember that as sole importers from the **only** source of supply we are able to maintain the **largest stocks** for the **longest time.**

In line with our policy of perfect frankness in the buyer's interest, we state that even our usually ample stocks have been largely reduced by unprecedented demands of late.

While we anticipate early arrival of a new cargo we urge the use, temporarily, of **genuine** Peruvain Guano in limited amounts with more liberal quantities of fish scrap, bone meal, goat and sheep manure, all of which we are supplying.

While our stocks are not exhausted, conditions warrant a more sparing use of **genuine** Peruvian Guano with replacements by the materials named above pending the arrival of this cargo.

Widely recognized for their ability to render practical service in grower's problems, our Field Representatives are always ready to consult with you on soil and citrus questions.

Our Staff is selected especially to give this valuable service to you, the citrus growers of the State.

If you can not reach our local representative readily, call on us direct.

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tempt to again establish the Jacksonville combination basis of making rates to the Peninsula of Florida which was so strongly condemned by the Commission in their decision in the Southern Class Rate Investigation in which the Commission said:-

"The present methods of making rates on the Jacksonville combination to and from Florida Peninsula is merely an arbitrary device for enhancing revenue. Ordinarily there is no change of carriers at Jacksonville and much of the traffic does not even pass through that point. The device may have been justified in the early stages of the agricultural and industrial development of Florida, but no sufficient justification has been shown for it, even in the modified form now proposed by the carriers, under present-day conditions."

The Decision of the Commission is another victory for Florida shippers and receivers, who have opposed the imposition by the carriers of unjust and unreasonable rates in the movement of traffic to and from the Peninsula of Florida.

Florida interests were represented by the State Railroad Commission, the Growers and Shippers League of Florida, The Tampa Board of Trade, the American Fruit and Vegetable Shippers Association, the National League of Commission Merchants, the Miami Chamber of Commerce, the Traffic Committee, Palm Beach and several other towns being represented by Thomas E. Grady and Company and Mr. John A. O'Rourke. Hearings were held at Washington, D. C., and Los Angeles, California. At the Los Angeles Hearing shippers were represented by the Western Growers Protective Association and others.

GOOD NEWS FOR GROWERS

Advice that Greenville, S. C. will be considered as a main line point on the Charleston & Western Carolina Railroad, effective May 15th, has been received from Mr. A. A. DuPre, Florida representative of that company, by M. L. Cullum, Traffic Manager of Chase & Company.

"We have endeavored for several years to get this privilege", Mr. Cullum says, "as it will mean a saving of $11.50 on each car of citrus reconsigned at Greenville. This evidence of good will on the part of the Charleston & Western Carolina officials toward Florida citrus growers is gratifying."

Florida Products for Florida Growers

Materials of demonstrated effectiveness for each citrus insect or disease, all bearing a "Made in Flordia" trademark.

Schnarr's New Process Standard Spray Formula
The original and leading genuine Oil Emulsion for control of scale and white fly.

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Rust Mite — Red Spider and mild attack of Scab.

Schnarr's Superfine Dusting Sulphur
Superior in floating and penetration for Rust Mite and Red Spider.

Schnarr's Bordol Mulsion
A perfectly compounded Bordeaux and Oil Emulsion. Used for past eight years in constantly increasing quantities for Lemon Scab and Melanose control and the same application gets the White Fly and Scab.

Schnarr's New Process Special Spray Formula
Safety combined with results for hot weather usage. Made from heavy and highly refined white neutral oil. A perfect Oil Emulsion.

In addition, a complete line of Spraying and Dusting Equipment.
A new Price List and Catalog is yours for the asking.

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Pioneers in 1906 --- Leaders Still in 1928
Complete line of Sprayers and Dusters

Orlando, Florida
Winter Haven, Florida

The Growers Clearing House

By T. G. Hallinan, Winter Haven

The long-heralded mass meeting of Florida citrus growers, held April 18 last, at Orlando, at which plans for the creation of a grower-controlled clearing house for the systematic distribution of citrus fruit were approved by the two-thousand growers present, now is history. The mass meeting is history only in the sense that it is an event of the past but its effects still are being felt and will be felt in all probability for some time to come.

The Orlando mass meeting was the culmination of the first of the two big tasks shouldered at Winter Haven more than two months ago by a group of earnest growers who later styled themselves the Growers Committee of Fifty. The Committee's two tasks were, first to set up a plan for the creation of a grower-controlled clearing house which would meet the approval of the United States Department of Agriculture and, second—after approval of the plan by the growers generally—to sign up the growers in the new organization. And so today, as this month's issue of The Citrus Industry is being distributed to its readers throughout the state, the second task shouldered by the Committee of Fifty is being undertaken and, according to reports from the headquarters of the Committee in Winter Haven, memberships are beginning to roll in.

Presentation of the clearing house plan to the growers assembled in Orlando two weeks ago, was followed by action on the part of the growers that unquestionably is one of the most significant steps ever taken in the history of Florida's citrus industry. The growers' approval of the clearing house plan, signified dramatically at the close of the presentation of the plan, when the growers arose as one man and clapped and cheered their own endorsement, promises success of the movement. The plan obviously met with the growers' ideas of the proper solution for the industry's marketing ills. They were reminded by speakers during the mass meeting that the state's ever-increasing crops must be borne in mind and provisions made for the proper marketing thereof. The plan presented to the growers answered their questions and they appeared satisfied that at last they were on the right track in the hitherto rough road of making their industry pay them for their investment and labor.

The outline of the clearing house plan was presented to the growers by James C. Morton of the Committee of Fifty. Mr. Morton's explanation of the plan, while necessarily brief, was given in his characteristically simple and straightforward manner. It was unadorned by oratory and the result was a clear picture of the plan which the growers readily grasped.

Merton L. Corey, formerly with the federal farm loan board, who has been engaged by the Committee of Fifty to direct the membership campaign for the new organization (called the Florida Citrus Growers Clearing House Association), followed Mr. Morton on the platform. Mr. Corey, who is known throughout the country for his prominent connection with and able work for many and various agricultural enterprises and movements, confined his talk to the subject of the clearing house plan as a "business-like business proposition". He termed the present movement as the most important of its kind ever taken and the "best conceived organized agricultural movement in our country today."

The membership campaign, which forms the second phase of the clear-

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ARE
"Time Tried and Crop Tested"
Our Brands are the Acknowledged Standard by which Growers of Florida have judged all Fertilizers for nearly 40 years.
"Giving all we can for what we get instead of getting all we can for what we give" is the policy of
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Removal
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ing house movement, is to be statewide in nature. More than 100 towns and cities throughout the citrus belt are to be the scenes of well-planned membership campaigns. In each of the 100 communities, local membership campaign committees, composed of five growers and five bankers and businessmen, are being formed —(many already have been formed) and dates set for the respective community growers meeting. Members of the Committee of Fifty, resident in the particular community, are to assist these local membership campaign committees in signing up members for the Association. Mr. Corey, Mr. James C. Morton of Auburndale and Mr. R. P. Burton of Emeraldo, are the three men who will be called on for the most part to explain the clearing house plan at the community grower meetings.

The membership campaign plans, as conceived by Mr. Corey, are complete in their detail. The name of every grower in each community has been placed in the hands of the members of the local campaign committees so that no grower will have cause to complain that he was not given an opportunity to join the association.

The crux of the membership campaign, as well as the success of the clearing house movement, hangs on the contingency of sixty per cent of Florida's fruit—as represented by the 1927-1928 crop—being signed up by July 10th. If the sixty per cent is gained by that date, and Mr. Corey, as well as the Committee of Fifty as a whole are confident it will be, then the clearing house will be established in time for the handling of next season's crop.

Mr. Corey, only last week in Auburndale where he addressed a joint-session of the Rotary and Kiwanis clubs of that city, declared there is nothing that will stop the present movement's progress. "The forces behind the Committee of Fifty as well as the forces behind the citrus fruit industry demand that this movement be successful—and it will be," he said.

Addition of 600 pounds of gypsum to peanuts increased the yield 54 pounds by the Florida Experiment Station.

Many troubles that poultrymen sometimes think are due to lack of minerals are usually caused by lack of sunlight or the vitamines furnished in cod liver oil.

The schedule of housework should be arranged so that it allows time for rest and emergencies. It is more apt to be followed.

Statement of the Ownership, Management, Circulation, Etc., Required by the Act of August 24, 1912, of The Citrus Industry Published monthly at Tampa, Florida, for April 1, 1928.

State of Florida,
County of Hillsborough.,

Before me, a Notary Public, in and for the state and county aforesaid, personally appeared S. L. Frisbie, who, having been duly sworn according to law, deposes and says that he is the editor of The Citrus Industry, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, towit:

1—That the names and addresses of the publisher, editor, managing editor and business manager are:

Editor, S. L. Frisbie, Tampa, Fla.

Business Manager, S. L. Frisbie, Tampa, Fla.

2—That the owners are:

Associated Publications Corporation, Tampa, Fla.

S. L. Frisbie, Tampa, Fla.

S. Lloyd Frisbie, Tampa, Fla.

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F. L. Skelly, Orlando, Fla.

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3—That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are:

Mergenthaler Linotype Co., Brooklyn, N. Y.

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Sworn to and subscribed before me this 12th day of April, 1928.

W. D. STONE.
Notary Public.

Osborn Brushes

For Cleaning Citrus Fruit

The more progressive packing houses have come to appreciate the real value of using Osborn Brushes for washing and polishing citrus fruit.

Osborn Brushes are carefully and accurately made to fit all standard scrubbing and polishing machines. They can be installed easily and with a minimum of time and expense.

Only the best grade of straight grained hardwood lumber is used. Hair and fibre are carefully selected to give you longer wear and a higher quality of work.

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Citrus fruit industry & trade.

Commercial Quality In Citrus Fruits

A. M. Tilden at Florida State Horticultural Convention, April 12, 1928

The horticulturist, the experimentor or plant breeder is similar in his operation to the scientist, who, in his laboratory, originates new and useful things.

It is as much of a problem to put the new and useful creations into common every day use as it is to originate them.

First, comes the creative idea to the scientist, then comes the practical idea of manufacturing and distributing after which must be proven the adaptability of the results of the experimentor for every day common use.

The immediate aim of the breeder of live stock is to produce an animal that will take first prize at the show or win the race but his ultimate aim is to improve a blood line that in turn may be transmitted to the every day animal in domestic use and thus raise the general level of the species.

From time to time, the plant breeder introduces to the public a new species which apparently is meritoricus; then comes the terrific task for the commercial producers to prove the usefulness of the product for the benefit of the consuming public and it may take more years to do this than it took to produce the new species at the experimental farm.

Somewhat similar in idea to this is the aim of the commercial grower to produce fruit of the highest quality. I think we will all admit that nature's purpose is to do this. But, between the blossoming and the picking, many things happen and it is the purpose of the grower to reduce these happenings to a minimum so that nature's effort for perfection will be assisted. In doing this, the grower is confronted with the law of diminishing returns. There comes a point when the next dollar spent will not produce more than a dollar in revenue. It is useful to spend a dollar when more than a dollar will be returned thereby but it is not useful to spend a dollar in productive effort when it will not return another dollar. A happy medium must be sought whereby the greatest returns may be had for the least expenditure.

To come down to a practical basis, I would make the statement that the average returns on a commercial crop are controlled more by low priced sales than by high priced sales. No grower, yet, on an average, ever received anything like what he is told is the market. The market as told to us by those that have in charge the selling of our fruit is as a rule the price paid for the best commercial quality. There is always fruit that does not come up to this standard and which sells for a lower price.

It has been my experience that the low price car pulled the average returns down more than the high price car ever pulled them up.

It is imperative that the selling price of a box of fruit, in order not to have a loss, must include at least the cost of raising and handling; if it be less than this, not only is the fruit lost but the profit on other fruit must be used to absorb the loss incurred by the sale of this class of fruit, and we find our averages extensively pulled down.

All growers have in mind the kind of fruit they would like to raise and which they often intend to raise. In the Spring, the grower visualizes his matured crop; he sees his trees full of perfect, bright unblemished fruit but when the Fall comes, he is more often disappointed than rejoiced.

In striving to obtain the highest quality, I think we should not lose sight of the importance of avoiding at all costs the raising of lowest quality. If the grower will determine that he will not have any bad quality, he will probably have an unusually large amount of very good quality and the major portion of his crop will be of fine commercial quality with commensurate returns. I think it much more important to avoid low quality in the commercial crop than it is to get a moderate amount of very high quality.

Florida oranges hang on the trees for many months; they are exposed to the action of the wind, the sun and the rains. If you can show me how to expose a fresh cut board to the action of the elements for several months without having it become weatherbeaten, I will show you how to raise unblemished fruit."

If you would carefully examine the standard grade of Florida "Goldens", you would find that 90% of the defacement is caused by conditions over which the grower has no control. Florida fruit is raised in a reasonably moist climate in which both fungus and insects thrive. This condition, while tending to produce the finest eating grade of oranges in the world, is, however, not conducive to producing the finest looking fruit in the world. On the contrary, California oranges are raised in a semi-arid climate where fungus cannot thrive and where the class of insects that deface the fruit do not have as favorable conditions as they do in Florida.

Also, Florida has the rust mite. But, as I have said, the defacement of the Florida "Goldens" is caused less by rust mite than by all other conditions. This statement will be contradicted by growers living in certain favored sections of Florida where rust mite is not prevalent. But the bulk of Florida fruit is raised where the rust mite is active and it seems impossible to entirely control the action of this insect.

How many times have you carried your fruit into the late Fall practically bright and then through the winter months had it slowly darken from the effects of a few mites working constantly day and night throughout the winter months. The commercial quality of this fruit is interfered with by this and care should be taken during the winter months to control the action of this insect. I am inclined to think, especially on the sand hills, that the commercial quality of our fruit is more interfered with during these months than during the summer months. Most of us are unable to find enough mites to apparently justify the expenditure of money in spraying and dusting but as the weeks go by, we find the fruit steadily becoming darker and its commercial quality lowered by almost imperceptible degrees.

One cannot control nature; one can only operate under the conditions which nature has super-imposed. One must recognize these conditions and adjust ones work accordingly. In fact, we should do our utmost to capitalize these conditions and I think we can do so. It seems a strange thing that the refuse of the

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A Safe Sulphur That Sticks

RUST:—The difference between the returns on bright and rusty fruit has increased during the past few years. It now costs about a dollar per box to board rust mite on your trees.

It costs only a few cents per box to keep your fruit bright by the use of sulphur sprays or dusts —the first treatment must be given before rust develops, not later than the middle of May.

Growers that prefer using "dry lime-sulphur" will find Stauffer's Wettable sulphur much more convenient. There is no grit to wear and clog your pump and it suspends in water like a cloud. It is wettable and yet is insoluble when dried on trees. Shall be pleased to send you a sample.

SCALE:—The latter half of May and early June is a good time to use Fico-60 for the control of scale insects and whitefly. Dilute 1 to 60 and use fish oil soap as a spreader. A quart of soap in sprayer gets better spread.

If you want to use sulphur for rust mite at the same time, Wettable Sulphur is ideal for that purpose. Comes in 100 pound bags.

Florida Insecticide Co.

Apopka : Florida

COMMERCIAL QUALITY IN CITRUS FRUITS

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sugar plantation should today be more valuable than the sugar. We have a seemingly peculiar fact that some of the wall board manufacturers are putting in sugar plantations for the sake of the fibre and putting up a refinery to use the juice which they consider a by-product. This is a wonderful example of capitalizing a waste. While it has not much bearing on Florida fruit, yet I think it an illustration of what may be done in capitalizing a so-called liability.

For many years, Florida growers have assisted the error that the bright fruit should be the highest price because it is the best. We all know that Russets are the best; however, their appearance is so much against them that it is hard to get this into the minds of the consuming public. But it should not be hard to get into the minds of the consuming public the idea that "Goldens" are beautiful to look at and marvelous to eat.

To elaborate further on the commercial quality as actually used in our every day commercial business, I would impress upon you the fact that the greatest essential in the merchandising of any product is uniformity of quality. A brand should stand for somtehing; it should stand for uniform quality whether the quality be high or low. It is more costly to have a reputation for fine quality when you fail to maintain it than it is to have a reputation for ordinary quality which you steadily maintain. If you have been astute and fortunate enough to build up a trade, it is unwise and reckless to give that trade a different quality than it has been accustomed to receive from you. It seems best to have two or three types of trade requiring different quality so that you can supply each and thus use up your orchard run and never be forced to unload inferior quality on the dealer who wants superior quality or vice versa. If your supply of "fancies" be limited, you should not ship it to a regular dealer. He may later want another car of "fancies" and you cannot supply them and he will look elsewhere. You should give the dealer always the quality which you can maintain throughout the year so that he will know what to expect from you and will always have his expectations realized. When you have a dealer feeling that he can depend upon you to such an extent that he can buy from you without inspection, knowing that he is getting what he wants, you have acquired a rare trade asset which will always be most useful to you.

Personally, I never ship my "fancies" to my car lot trade. I ship them to the big centers and sell them as is, and I have always shipped to my car lot trade, a uniform commercial quality which I can maintain all through the year and from year to year.

It is most unwise to mix quality in a car. Very few dealers have such a mixed retail trade that they can use both the superior and the inferior quality. The dealer wanting fine commercial quality is lost when he gets an inferior quality; he does not know what to do with it and likewise the dealer who trades in inferior quality is lost when he gets a superior quality because he does not have the trade that can afford to pay the price for it. The dealer who handles inferior quality steadily can pay more for it and make a profit than a dealer who uniformly handles the superior quality. And so I wish to again call your attention to the importance of striving more to avoid raising low quality than to devoting your attention entirely to raising some very high quality. I think that such a policy will result in more high quality than a direct striving for high quality. Then, insist that strenuous efforts be made to emphasize the excellence of your commercial quality which so far has been largely "Golden" grade. Persuade the consuming public that this is the best and then steadily give the consuming public uniform quality, and, commercially, you will have made a success of the fruit business.

CLASSIFIED

Advertisments

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

REAL ESTATE

WILL EXCHANGE West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 3410 McKinley Ave., El Paso, Texas.

"BOOK OF TRUTH"
For planters of new groves
Is yours for the asking.
Write Today.
OCKLAWAHA NURSERIES INC.
"Pedigreed Citrus Trees"
Lake Jem, Florida

FOR SALE—Pineapple land in winterless Florida. $15 an acre. Almont Ake. Venus, Fla.

WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY, ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.

SATSUMA BUDWOOD from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

WANT TO hear from owner having farm for sale; give particulars and lowest price. John J. Black, Box 93, Chippewa Falls, Wisconsin.

WANTED—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

MISCELLANEOUS

FOR SALE—Dairy and stable manure, car lots. Link & Bagley, Box 464, Tampa, Fla.

WHITE WYANDOTT Cockrels, regal strain—the best in the country, direct from Martin pens. Utility and show birds $5.00 each; also eggs for hatching $5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Fla.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Fla.

WANTED
COMPLETE LINE OF CITRUS GROWERS' SUPPLIES

A well known reputable firm of national scope, marketing certain materials required by citrus growers, is extending its line of merchandise to cover complete requirements of its customers.
If you have something excellent to merchandise—fertilizer, orchard heaters, pest control material or equipment, or any similar product for wide distribution—I can tell you whom you should see.
Address: J. T. Pierson, 503 South Union Drive, Los Angeles, Calif.

BEGGARWEED SEED. Place your order for Beggarweed seed now and be assured of delivery. Write for special prices. Wm. G. Ranney, Box 297, Monticello, Fla.

PUREBRED PULLETS FOR SALE—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

LAREDO SOY BEANS, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

FARMER AGENTS: Make $25.00 weekly selling Comet Sprayers. Profitable winter employment. You take orders. We deliver and collect. Commissions weekly. Established 35 years. Particulars free. Rusler Co., Box C-18, Johnstown, Ohio.

FOR SALE—All varieties bananas and citrus trees. D. A. Nigels, Palm Harbor, Fla.

RUNNER peanuts—Spanish peanuts Early speckled - Osceola - White Chinese and Bunch Velvet Beans. All varieties peas and Soybeans. Large or small lots. H. M. Franklin, Tennille, Georgia.

AVOCADOS - SEED — Grafted. Reliable bearers only. John B.Beach, West Palm Beach, Florida.

PLANT AVOCADOS in Redland Section, Dade County, where they thrive best. Best paying crop in United States. Send for prospectus. Brooks Properties, Realty Board Bldg., Miami.

BABY CHICKS: Send no money, shipped C. O. D., pay mail man when delivered. Leghorns $14.00 per 100; reds, orpingtons, minorcas $16.00; mixed $13.00; live delivery, postpaid. Florida Baby Chickery, Lakeland, Florida.